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The 'Moon Shots' of 21st Century Talent

Comparative Corporate Training and Leadership Development at General Electric and Toyota

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To Gitte – wife, closest friend, idea adviser, writing consultant, thesis editor, and shoulder to lean on. Without a doubt you are the bedrock that allowed this project to finish, despite its ups and downs. Thank you from the bottom of my heart.

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Chapter 1 - The 'Moon Shots' of 21st Century Talent

Moving beyond what works – the tried and true methods created by past success – is a catch-22 all companies face. The dilemma is that proven methods are the forte of efficient execution of business activity. But once rendered obsolete by the inescapable change that assails the business environment, relying on these same methods impairs the ability to cope with change. So as the organization, systems, and employees become dependent on antiquated activities that are no longer productive, the restraint to abandon outmoded practices, learn new ways, and cope with the unexpected mounts. In time, this restraint slows or even halts the development of performance-enhancing capability in the company, with dire consequences. Outclassed, outdated, and outmoded ways drive down efficiency, lower productivity, and decrease competitiveness – a lethal cocktail that has condemns its victims to a downward spiral of gradual corporate decline.

To avoid obsolescence, companies have to recalibrate their activities and steer a path that embraces change. To illustrate this point, picture an organization as being composed of two sides, one structured and the other flexible, like two wheels connected by a shaft, as in Figure 1-1. The structured side depends on the reproducibility, standardization, reliability, and efficiency of practice (i.e. skills, routines, and processes); the flexible side on practice replacement, invention, innovation, and incorporation. Both sides are important – together they determine the capability potential of the organizational whole. Emphasizing just one side causes one wheel to become larger than the other, leading to a lopsided organization that spins out of control. To move towards higher levels of performance both sides have to be equally emphasized, aligning the organization to embrace change and develop new performance-enhancing capability.

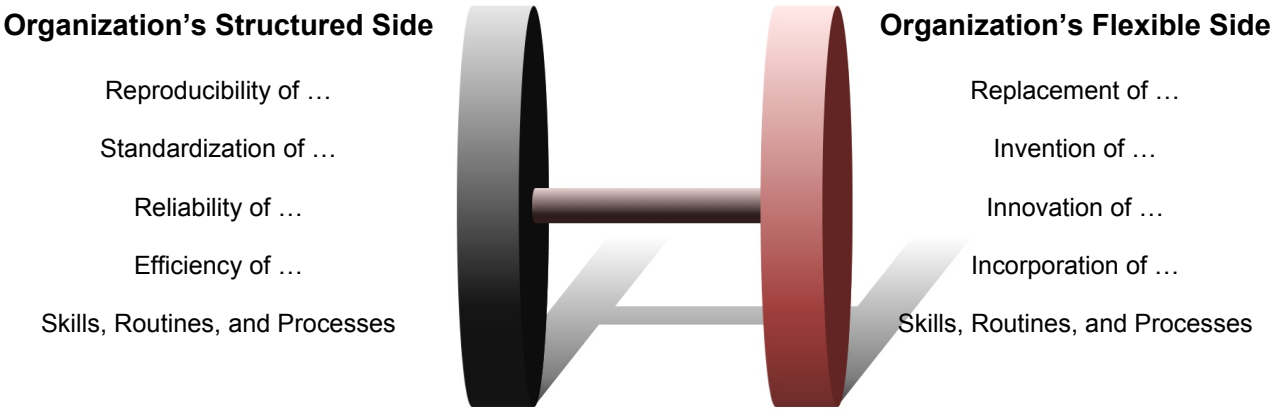


Figure 1-1. The Two Sides of the Ideal Organization.

Note. Created by author.

As an example of activities that emphasize the two sides of an organization and embrace change, consider the following practices at General Electric and Toyota, two venerable firms that have kept their two sides aligned and in step with the changing times:

- **Build structure by developing talent over the long term.** Employees at General Electric are exposed to a continuum of rank-tiered training encompassing business, functional, and leadership skills that spans over 15 years, with content that is constantly updated to reflect the most relevant and timely development need. Similarly, Toyota also has lengthy training programs that instill problem-solving acumen and process improvement know-how through structured hands-on curriculums that take up to 20 years to complete.
- **Increase flexibility by evolving the tools that drive change and fuel growth.** The tools at General Electric to support and promote change, such as the Change Acceleration Process and Six Sigma, are constantly upgraded to improve utility and practicality. These revisions also require regular workforce retraining to keep up with the latest tools. The Toyota Production System, with its emphasis on the

continuous improvement of processes, also evolved into the Toyota Business Practices, a new business standard reflecting the need to maintain the integrity of Toyota Way principles as the company globalized operations outside Japan.

- **Curb restraint to change by cultivating the attitude to learn by solving problems at the source.** At both companies, managers learn to 'learn' from the work they do – discover the truth by 'digging deep' where the action is, seeking out and resolving problems on the spot. To own the issues, managers also learn to face those who know the issues and build critical support for initiatives that bring about change and raise standards.
- **Embrace change by building a work environment that never settles for the status quo.** At General Electric, management is constantly changing direction to topple value-creating targets by moving beyond the ways of past success, regardless of how well the company is doing. At Toyota, dissatisfaction with the current state of affairs is bred through the continuous improvement of existing process standards, with past experiments serving as the baseline for future progress.

Essentially, both firms set into motion activities that elevate performance-enhancing capability to new heights by altering structure, flexibility, and restraint. This is illustrated by the Capability Booster Framework, a three-block model that lies at the heart of this study (Figure 1-2). The framework shows how General Electric and Toyota increase capability by capitalizing on individual and organizational experience, leveraging it to overcome the restraint to change that slowly calcifies inside organizations, in operational systems, and in employees, over time degrading acceptance to capability-imparting change. First, both companies *enhance structure* by developing talent over the long term. Second, they *catalyze*

flexibility by evolving and dispersing the tools that drive change and fuel growth. And third, they *lower restraint* to change by cultivating the attitude to learn by solving problems at the source in an environment that infuses people with dissatisfaction for the status quo.

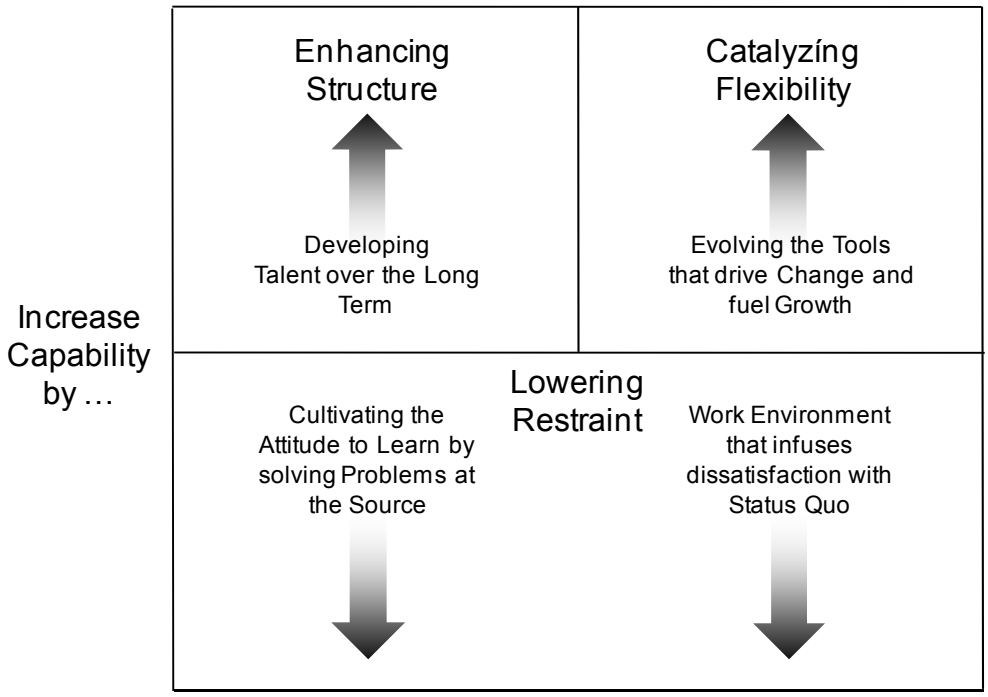


Figure 1-2. The Capability Booster Framework.

Note. Created by author.

The capability booster framework is based on the notion that organizations are complex, multi-layered entities, like onions, where peeling away an outer layer reveals a hidden layer underneath. Using this metaphor, companies like General Electric and Toyota can be thought of as being composed of four concentric layers where capability develops – *Corporate Culture*, *Leadership*, *Instruments for Change*, and *Talent Management*. The layers are stratified according to how visible they are to company outsiders, with *Talent Management* (e.g. facilities, programs, training content) being the most visible, placing it as the outermost layer, and *Corporate Culture* (e.g. principles, values, beliefs) as the most intangible and invisible, hence its position at the center (Figure 1-3).

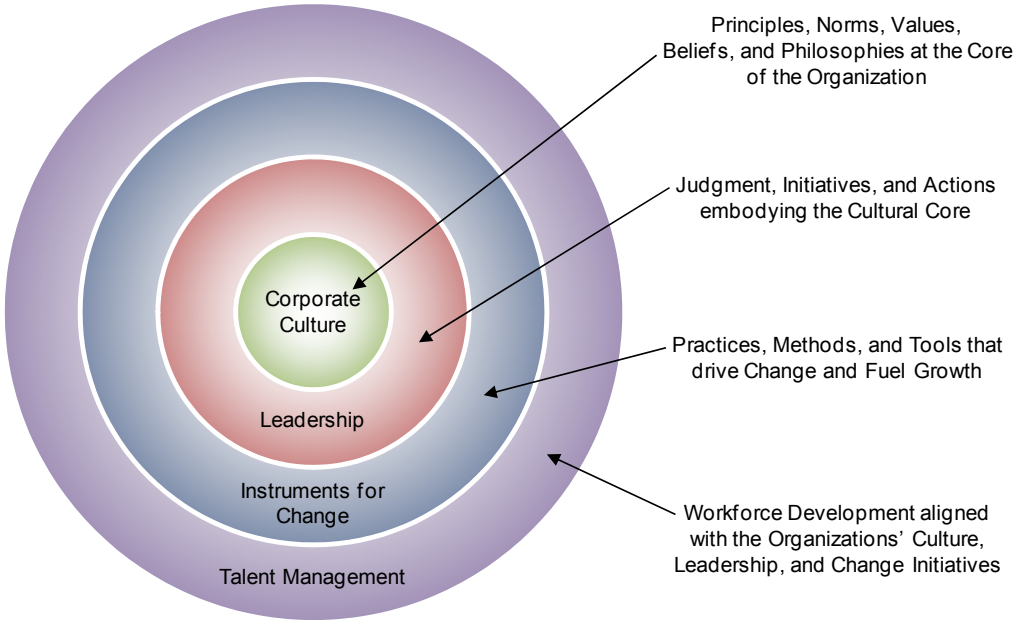


Figure 1-3. The Four Layers where Capability Develops in an Organization.

Note. Created by author.

In the innermost layer of *Corporate Culture* is where the underlying principles, norms, values, beliefs, and philosophies that guide behavior, decision-making, and execution exist. The cultural core is also the foundation that shapes and structures all the other layers in the organization (Schein, 1984: 5-6). Surrounding the core is *Leadership* – the judgments, initiatives, and actions of individuals who embody the core principles, norms, and values of the organization. It is in this action-orientated layer where the individual plays an essential role to actualize the company's respective corporate culture. The next layer is *Instruments for Change* – the practices, methods, and tools that promote change and fuel growth throughout the organization and support leadership judgment, initiative, and action. The outermost layer is *Talent Management* – the approach to attract, develop, manage, and retain a capable workforce that exemplifies the organization's cultural core, leadership qualities, and change initiatives.

The capability booster framework can reveal potential ways to 'boost' capability in each layer – hence the name of the framework. For example, in the case of General Electric and Toyota, *developing talent over the long term* enhances structure in the outermost *talent management* layer, whereas *sustaining a work environment that never settles for the status quo* lowers restraint in the corporate culture layer. The point is that efforts to align the two sides of the organization and increase capability development can be discretely classified as taking place in one of the four layers of the organization.

Consequently, the four layers – *Corporate Culture*, *Leadership*, *Instruments for Change*, and *Talent Management* – are the focal points of the booster framework to discern how each can be primed to develop the 'Moon Shot' talent that builds capability in the organization.

From Management 'Moon Shots' to Talent 'Moon Shots'

Before revealing what is meant by 'Moon Shot' talent development, it is essential to be familiar with the 'grand' challenges to reinvent management practice and make it more relevant in the volatile business environments of tomorrow. These 'grand' challenges, envisaged by a group of management scholars and executives of global enterprises and published as the "Moon Shots for Management" in the *Harvard Business Review*, address the diminishing returns of dated yet still prevalent 'modern' management approaches developed for the industrial demands of the late 19th and early 20th centuries (Hamel, 2009: 92-94). These approaches eschew the human side of management by mechanizing human endeavor as a series of compartmentalized efforts that drive efficiency – rote skills, assembly lines, robotics, and automation.

This view is no longer valid in the knowledge society of the 21st century, where organizations have to be as adaptable as the people that work in them, and the means of production has shifted towards know-how and *savoir-faire* – the 'deep smarts' embodied in

the head and hand of each employee, supplier, customer, business partner, and community stakeholder.[1] In the knowledge society, company growth depends not just on efficiency and productivity, but on leveraging dispersed know-how and overcoming the ambiguity and uncertainty that arises in the process of managing a firm. Consequently, success will hinge on cultivating people capable of managing dilemmas throughout the organization.

This is the aim of the management 'Moon Shots' – to re-humanize management by *ensuring that the work of management serves a higher purpose* aligned with socially significant goals, *fully embedding the ideal of community and citizenship in management systems* to reflect the interdependence of stakeholders, *reinvents the means of control* to encourage discipline from within rather than enforcement from without, and *redefines the work of leadership* to enable collaborative innovation.[2]

So, if management has its challenging 'Moon Shots,' the development of people also has its 'Moon Shots' – the 'grand' challenges companies must meet to cultivate the talent needed to drive change and growth in a volatile and uncertain 21st century. The four ideal 'Moon Shots' of talent development are:

- **Erect the infrastructure to pick out diamonds (i.e. people) from the rough, polish them to a sparkle, make them shine, and keep their luster from fading.** Finding the right people, developing them, putting them in the right position, and keeping them from leaving are each big challenges. Seamlessly doing all four is the 'grand' challenge of talent management. A porous organization, where talent flight outpaces its replacement, is condemned to a slow decline.

[1] The 'deep smarts,' as coined by Leonard and Swap (2005), is a type of tacit knowledge, or knowledge that is only known by an individual and is difficult to communicate to others. This derives from Michael Polanyi's (1962) process of 'tacit knowing' where individuals experience the world by integrating their subsidiary awareness (of immediate surroundings) into a focal awareness (spot of principle interest), giving knowing (and knowledge) an indispensable component that is unique to every individual (Brohm, 2005: 14-15).

[2] For a full description of the 25 "Moon Shots for Management" see Hamel (2009).

- **Outfit people with the practices, methods, and tools needed to make change happen.** Even the most efficient process will eventually fade into obsolescence. Replacing them requires innovation, which can only occur if everyone in the organization has in their hands the tools to make change happen, the acumen to capture it, and the patience to incorporate it.
- **Develop leaders who champion change by observing, listening, and learning alongside others.** Change and innovation will not come from doing things right, but from doing the right things.[3] Making the call of doing right in the face of uncertainty requires imaginative insight, the confidence to acknowledge creative limits, and the openness to tap others for inspiration.
- **Cultivate the mindset of performing cooperatively and collaboratively, with respect and trust.** People do not work in a vacuum, and neither do the companies that employ them. Ignoring or overlooking stakeholders, even if unintentional, is to discriminate against them – something all companies must avoid. Even the most far flung needs – from the supplier's supplier to the communities where business and customers coexist – are to be accommodated to build mutual reverence and reliance that allows coexistence well into the future.

The lack of a 'Moon Shot' talent development program – one that attracts, develops, and retains the right people, furnishing them with the instruments, the leadership traits, and the values to overcome the 'grand' challenges of management – will be the competitive Achilles heel of enterprises in the 21st century. The potential risks can be overwhelming: dissatisfied workers, poor customer service, low customer loyalty, high employee turnover, and an irrecoverable outflow of know-how and experience. But not all is doom and gloom.

[3] Adapted from management consultant Peter F. Drucker's expression: "Management is doing things right; Leadership doing the right things."

There is an escape hatch, and it involves developing talent from a new and invigorating direction.

Consider The Walt Disney Company, which has long understood the impact of an unforgettable 'Disney Magic' experience on company performance and the vital role training plays to deliver it (Martinez, 1992: 53). Training its employees makes them feel motivated and, when paired with frontline delegation of authority, empowered. This boosts the service quality Disney provides its customers, lifts service satisfaction levels, and increases the likelihood that customers will become loyal patrons (Heskett, Sasser, & Schlesinger, 1997: 12). The positive correlation between training, employee capability, and bottom line result is too important for business managers to overlook. As companies face escalating competition, an increasingly complex business environment, and information savvy customers, the need to develop people capable of handling conflicting demand and uncertainty is more paramount than ever.

According to Michael Porter (1998), a leading scholar in the field of competitive strategy, achieving a sustainable competitive advantage vis-à-vis competitors requires firms to have a unique value position, involving clear trades-offs and a different and tailored set of activities that reinforce each other. So an effective, difficult-to-emulate, talent-building program will yield performance improvements unmatched by those coming from one-size-fits-all training solutions. Accordingly, fine-combed recruitment screens and performance assessments – to *find* the right people – paired with rigorous employee and leadership training– to *develop* them – are the two most important tools to enhance workforce capability and sustain competitive advantage (Senge, 1994: 314; Tichy & Bennis, 2007: 248; Collins, 2009: 13-14).

This is the ultimate aim of the talent 'Moon Shots' – to push the limits of superior and sustainable company growth by cultivating the capability in people and in organizations to

manage the uncertainties of a volatile 21st century. The capability booster framework is the vehicle for organizations to achieve 'Moon Shot' talent development. So, before moving to the purpose of this study it will be helpful to become familiar with the most direct means to develop talent in firms – employee training.

A Primer on Employee Training

Management consultant Peter F. Drucker once wrote that the purpose of business is to create and keep a customer, and that every business enterprise has only two basic functions – marketing and innovation (1954: 37). Sustaining and developing these functions requires a network of coordinated and integrated human resource development initiatives that span every organizational layer to enhance the *using* (application) and the *doing* (creation) of knowledge throughout the business enterprise (Bradford & Burke, 2004: 8-10; Castells, 1996: 32). Training that proportionately attends to the respective needs of each organizational layer in a company can curtail the uneven development of the workforce, diminish the capability disjoints that distort employee performance, and nurture latent individual talent.

However, this is an ideal. Problems stemming from inappropriate or ineffective training programs that are a poor match to development need are a more accurate picture of the reality many companies face. The next three sections outline the basics of employee training, starting with the rapid growth of executive education since the 1990s, typical methods and approaches, and the most common issues.

The Growing Executive Education Market

A rarity during the 1980s, there are now over 2,000 well-established, customized corporate training centers (or corporate universities), with notable examples including the McDonald Corporation Hamburger University, the Cisco Systems Networking Academy, and Motorola's Six Sigma training centers (Bourne, Harris, & Mayadas, 2005: 131; Meister, 2001: B10). This trend reflects the growth of management education, which in the U.S. alone

increased from a respectable $16.5 billion industry in 1998, to a $56.2 billion behemoth executive education market in 2008, with over 20 percent of all training dollars funneled towards leadership development and management training (Bersin & Associates, 2008, January 29; Reingold, Schneider, & Capell, 1999). And in traditional universities, almost one fourth of all 2006 U.S. graduate degrees were awarded in the field of business, up from 11 percent in 1971, with similar trends in Europe and Asia (UNESCO, 2008: 68, 112; European Commission, 2007: 164; UNESCO, 2006: 16-17, 142).[4]

Business schools have also hopped onto the corporate education bandwagon, tapping it as a growing source of profitable revenue as firms increasingly rely on business academics as 'expert instructors' in their internal education programs. For example, in 2009 the Fast Retailing company, Japan's leading clothing apparel manufacturer and retailer, established a global management training center through educational partnerships with professional business schools in Japan, France, and the U.S. at an estimated monthly cost of just over $5,000 per trainee (Tadashi Yanai, personal communication, 2009, May 31).

Typical Methods and Approaches

Training methods are generally classified into two types: 1) 'point' solutions, or generic programs characterized by the instruction of general content (e.g. teaching using manuals, lecture-based instruction/seminars, general executive education), and 2) 'integrated' solutions, or customized programs characterized by the instruction of content tailored by need (e.g. personalized coaching/mentoring, in-house leadership programs, firm-specific consulting, specialized technical training centers).

In addition, training can also be classified into levels with respect to the approach (or mode) used for instruction and learning. For example, structured, instructor-led, coursework-

[4] In 1971, of the 230,509 master's degrees conferred by degree-granting institutions in the U.S., 26,490 were in the business discipline. In 2006, these figures were 594,065 and 146,406, respectively (U.S. Department of Education, 2007).

intensive, and learn-by-doing programs – the most common form of training due to its ease of implementation – are considered low-level approaches to learning because they typically emphasize the mere repetition of past behavior (i.e. rote learning). This is different from the higher-level 'single-loop' (i.e. experiential learning, typically through project-related, site specific, mentor-led, and on-the-job training) and 'double-loop' approaches (where learning derives from the reflection and questioning of the values, assumptions, and policies that guided past decision-making and action). Unlike low-level learning, which simply reinforces past practice, higher-level learning can develop complex rules and associations regarding new actions, understanding of causation, as well as reframe the norms, references, and assumptions that impact decision-making and action in the organization.[5]

Common Issues

While spending in employee training and leadership development has grown considerably since the 1990s, there are several problematic issues concerning corporate training, which span from training effectiveness to the motivation of employees to learn and develop:

- **Training effectiveness and impact are difficult to assess.** Existing training methods – ranging from executive education, coaching, mentoring, consulting, and corporate training centers to degree granting programs like the MBA – come in so many flavors that it is difficult to gauge their effectiveness across diverse corporate contexts (Schneier, Beatty, Russell, & Baird, 1994).[6] Quantifying the training impact on company performance is also not an easy task. For example, despite ample evidence validating its positive impact on developing human

[5] For details on single- and double-loop learning, see Argyris and Schön (1974; 1978). On the distinction between low- and high-level types of learning, see Fiol and Lyles (1985).

[6] In their edited collection of training case studies *The Training and Development Sourcebook* (1994), Schneier et al. present a comprehensive collection of training and organizational development approaches with over 50 articles by leading practitioners in the training field. Designing a tailored training program based on this collection is a complicated endeavor, given the wide variety of options from the over 50 documented case studies and company examples that are included.

resources and productivity, disaggregating and quantifying the impact of a given training program on company performance remains a daunting task, especially when intangibles, such as management style, employee satisfaction levels, or even customer satisfaction ratings, are taken into account (Dearden, Reed, & Reenen, 2006; Becker, 1975).[7] This makes the design of point and integrated training programs based on their capital investment return a risky proposition, especially if the detrimental impact of resource scarcity (of employees, capital, and time) and poorly designed training on training effectiveness and employee productivity is overlooked or ignored (Phillips, 2003; Meister, 1998: 22-26, 30-58; Adler & Clark, 1991: 277).

- **Training penny-pinching and short-term impact go hand in hand.** Any benefit from point training on workforce performance becomes mute over time once competitors adopt similar methods in their development programs. On the other hand, integrated training programs that yield sustainable benefits because of their contextual specificity and difficulty to emulate require constant adjustment and refinement, which is expensive and time consuming. Resource-constrained companies looking to develop effective training programs, develop talent, and improve performance face a dilemma of choosing between readily available and affordable generic methods of questionable long-term value or creating their own resource-intensive, custom-built solutions. For example, companies that spend lavishly on leadership-level training tend to penny-pinch training for everyone

[7] Dearden et al. (2006) conclude in their study relating the training impact on worker productivity that a one percent point increase in training is associated with an increase in value added per hour of about 0.6 percent and an increase in hourly wages of about 0.3 percent. However, this finding is based on wages from the British industries from 1983-96, which are used as the statistic proxy to show how work-related training correlates positively with higher productivity. Individual-level data sets suggestive of training externalities aside, this study does not distinguish between various training programs used in different industries, nor does it disaggregate the impact from outsourcing labor-intensive functions.

else. As a result, almost 40 percent of line managers in the U.S. lack the skills to effectively drive employee performance (Bersin & Associates, 2008, October 15).

- **Traditions dictate the approach to learning.** Some training methods are more common than others due to preferences borne from past practice or to satisfy sudden demand and create quick results rather than sustained impact (Garvin, 2000: 4). For example, in research-intensive industries, such as electronics or pharmaceuticals, knowledge builds gradually through collaborative research endeavors, typically in partnership with university-affiliated laboratories; a process that favors traditional university-based instruction (Harrison, Leitch, & Chia, 2007: 332). But in the consulting and financial services industries, where freshly minted MBAs are hired for their business-related quantitative and communication skills onto which industry specific know-how is added, internal instruction and ad hoc mentoring is the preferred method of choice (Prior, 2009: 273; Fisher, 2006). Altering such established approaches can be futile affairs because the practices are firmly entrenched in the organization and participants are typically unwilling to part ways with time-honored systems.
- **Tradeoffs lower the motivation to learn and develop.** No single method satisfactorily addresses the diverse skills-maintenance and talent-building needs of companies. For example, training programs strong at delivering practical, problem-solving content (e.g. analysis tools, frameworks, models, case studies with rigid teaching objectives) are often weak at addressing the specific training needs of individuals that create understanding and insight based on their unique set of experiences (Holland, 2009: BU1; Mintzberg, 2004: 28; Argyris, 1956: 29-30). Also, as organizational routines decay with disuse, re-training is needed to maintain general skill sets at peak levels. But to deepen organizational routines,

> companies must perform specialist training (Hannan & Freeman, 1989: 76). Addressing the needs of both generalists and specialists strains resources, forcing companies into compromising tradeoffs that make training seem an intrusive, exclusive, entitling, or ineffective endeavor, causing employees to resist efforts to learn and change and render useless even the most effective training program (Prokesch, 2009: 100).

1.1 *Raison d'être* of this Study

The aim of this dissertation is to create unique and practical insight into existing paradigms of 'Moon Shot' talent development. This is achieved by comparing the exemplary, globally recognized, yet vastly different corporate training and employee development practice at U.S.-based General Electric Company and Japan-based Toyota Motor Corporation.

What is interesting about these two specific companies is that their vastly different approaches to vibrantly develop capability in each organizational layer – talent management, instruments for change, leadership, and corporate culture – resonate with the ideals of 'Moon Shot' talent development. For example, both firms develop people over the long term, equip workers with the tools that drive change and growth, cultivate a proactive management that willingly participates and learns from others, and build a work climate where dissatisfaction with the status quo drives the pursuit of doing better and acceptance of change.

Bear in mind that General Electric and Toyota are by no means the only companies with 'Moon Shot' talent-building programs. The training practices and facilities at other

leading, world-class firms would have also been interesting candidates for this study.[8] However, scrutinizing a different set of companies, or even looking at three or more companies, would not necessarily provide an equal or greater depth or breadth of comparative insight into 'Moon Shot' talent development as with General Electric and Toyota. The fact that both are long-standing leaders in their respective industries (e.g. global presence, market share, long-term growth, sustained profitability) yet very different with respect to human resource management, operational practices, and organizational structure widens the gulf that separates their distinctive approaches to employee training and leadership development. This makes General Electric and Toyota a dialectic pair that is both intriguing and insightful.

There are two additional benefits to comparing General Electric and Toyota. First, in contrast to other studies on corporate training (e.g. Schneier, Beatty, Russell, & Baird, 1994) that tend to focus on the 'interesting' or 'best' aspects of a particular program at a company, this analysis provides a thorough picture into the good and the bad aspects of proven corporate training practices that effectively develop performance-enhancing capability. This provides insight into measures taken by both firms that overcome some of the issues concerning training that may aid company managers in the execution of 'Moon Shot' talent development at their own firms. Second, despite the many publications on these two companies, there is no comprehensive comparison of their global training programs, making

[8] Other companies with recognized employee training programs include the Boeing Company (and its 286-acre Boeing Leadership Center campus), Canon (and its three Japanese training centers in Toride City, Kawasaki City, and Oita City), Harley-Davidson (and its partnership with the Motorcycle Mechanics Institute), Johnson & Johnson (and its eUniversity and School of Personal and Professional Development), ISS (with its Danish-based ISS University focused on facilities management), Proctor & Gamble (and its wide array of in-house training programs), Southwest Airlines (with its unconventional 'University for People'), and the Walt Disney Company (and its two Disney Universities in Florida and California).

this a unique and refreshing look at the role that training in talent management, leadership, instruments for change, and corporate culture has on capability development.[9]

Foundational Theory

Analyzing the impact of corporate training and leadership development on performance-enhancing capability requires considered understanding of the theoretical underpinnings of learning and organizational development, with emphasis on how structural, cultural, and social factors constrain learning and growth. Because these restrictive factors are noticeably absent from existing models of learning, such as the *action learning* process (Revans, 1980), a new model – capability accretion – is developed in Chapter 2 of this study. It operationalizes how restraint (of operational rigidity, of organizational inertia, and of socio-cultural norms) in a company's organizational 'ecology' affects learning, knowledge creation, and ultimately, capability development. The capability accretion model serves as the template for the capability booster framework used in the comparative analysis of 'Moon Shot' talent development at General Electric and Toyota.

Creating a new theoretical model and comparing only two cases does have its drawbacks. The limited scope of the data sample increases the likelihood of analysis and interpretation bias, both of which complicate the external validation and generalization of findings. Comparing different companies would also yield different, perhaps even contradictory, results and findings. This model is not intended to be a final analytical tool. Instead it is intended to inspire others to undertake similar comparative analyses of corporate training programs at other companies, thereby creating new data sets that will build on and expand the findings of this study.

[9] Studies on General Electric and Toyota published since 1994 include Magee (2009), Colvin (2008), Osono, Shimizu, Takeuchi, and Dorton (2008), Tichy and Bennis (2007), Liker and Hoseus (2007), Liker and Meier (2007), Hino (2006), Liker and Meier (2005), Liker (2004), Ulrich (2002), Eckes (2000), Garvin (2000), Reingold (1999), Slater (1999), Meister (1998), Besser (1996), and Collins and Porras (1994).

Methodology and Data

The primary sources of data include over 30 structured and in-depth interviews with current and former senior-, mid-, and entry-level managers as well as training personnel at both General Electric and Toyota. These interviews, which took place from 2006 to 2009, are supplemented by site visits to the corporate training centers at each company. Secondary data sources include unpublished internal documents, presentations, and training materials, as well as publicly available annual reports, financial/IR data, SEC reports, and corporate web sites. The collected data was used to compare corporate training at General Electric and Toyota along the lines of talent management, instruments for change, leadership, and corporate culture, create layer-specific booster frameworks, and identify new 'Moon Shots' of talent development.

Chapter Structure

Including the introduction, this study has seven chapters, with Chapter 2 developing a model of capability accretion to characterize the factors that influence the accretion of performance-enhancing capability. This chapter also describes the capability booster framework, and how it relates to the model of capability accretion. The next four chapters are sequenced based on the stratification of the layers where capability develops in an organization, beginning with the outermost talent management layer (Chapter 3), then progressively deeper through the instruments for change (Chapter 4), leadership (Chapter 5), and corporate culture (Chapter 6) layers. Chapter 7 combines the booster framework assessments of the four layers into single unified evaluations allowing the side-by-side comparison of the capability-building ecologies at both companies, before concluding with the findings and implications of this study.

Before delving into the theoretical underpinnings of the model of capability accretion, the chapter closes with an overview of General Electric and Toyota, contrasting their vast differences with respect to operational and organizational practices.

1.2 General Electric and Toyota

Ranked by *Fortune* in 2006, 2007, and 2008 as two of the three most globally admired companies, it is almost impossible to find an odder couple of very profitable and highly regarded companies than General Electric and Toyota. Their differences do not stem only from their respective industries, but from their characteristics and organizational policies as large, globally successful companies.

General Electric is one of the few successful global conglomerates. With over 300,000 employees in subsidiaries ranging from aviation and industrial power systems to capital finance and entertainment, it is the only company to still be a part of the Dow Jones Industrial Average since the index was created in 1896. Its consistent corporate performance (e.g. year-over-year revenue and earnings growth of 12 percent and 7 percent, respectively, from 2004 to 2008, higher than any other conglomerate) has placed it among the world's 10 most valued companies since the 1970s (Tichy, 2008).[10] General Electric's corporate training facility in Crotonville, New York, has served as a conduit for management development in cutting-edge thinking in organizational development, leadership, innovation, and corporate transformation since it was established in 1956 (General Electric, 2007a: 27).

In 2008, Toyota sold almost 9 million cars and trucks in over 170 markets, surpassing General Motors as the world's biggest auto producer. In profitability, Toyota's net income has consistently surpassed the other auto companies by a factor of over two to one for the

[10] By comparison, General Electric's year-over-year revenue and earnings growth were 13 percent and 14 percent, respectively, from 2003 to 2007. The drop in earnings growth during the five-year period ending in 2008 reflects the economic fallout stemming from the global financial recession that started in 2007. Figures sourced from the company's annual reports (General Electric, 2007a; 2008a).

past several years. Thanks to a high rate of growth (averaging over 10 percent per year from 2004 to 2008, higher than any company in the auto industry), Toyota's market capitalization at the end of 2008 was almost 10 percent higher than its next contender (Volkswagen AG), and more than fifty times that of General Motors, its largest rival.[11] Toyota also has an extensive employee development program that has proven effective at inculcating Toyota values such as 'respect for people' and *kaizen* (meaning "continuous improvement") to its global workforce of over 300,000 employees.[12]

Operational practices related to *hard* system innovations at both firms are widely emulated, and both for-profit and non-profit organizations try to learn and adapt their methods in order to improve internal processes and develop, or even acquire, managerial talent. The infamous 'GE Matrix,' a multi-factor analysis model that is now the de facto standard in product portfolio management, was developed at General Electric. The company is also recognized as a CEO breeding ground that has produced numerous executives who have gone on to run other companies, including Dave Calhoun at the Nielsen Co., Bob Nardelli at Home Depot and then Chrysler, and James McNerny at Boeing (Rowe, White, Lehmberg, & Phillips, 2009). Likewise, ex-Toyota executives are sought for their knowledge of the Toyota Production System (TPS) of manufacturing that enables nimble production of high quality, reliable products at lower cost in response to fluctuating market demand. For example, the 2005 World Exposition in Japan was led by a Toyota executive acting as Commissioner General, the Japan Post Company, one of the country's largest public institutions, was run by a former chief of Toyota Motor Italy as its first CEO, and the current

[11] Growth rates based on consolidated fiscal year revenues and net income. Due to an industry-wide global slump in auto sales and appreciation of the Japanese yen against the U.S. dollar and the euro, Toyota's year-over-year vehicle production, unit sales, and revenues contracted from fiscal 2008 to 2009 by 16.3 percent, 15 percent, and 21.9 percent respectively, leading to the company's first annual net income loss (of $4.4 billion) since the 1950s. Figures sourced from the company's annual reports (Toyota Motor Corporation, 2008a; 2009a). Year-end market capitalization figures for General Motors, Toyota, and Volkswagen AG sourced May 8, 2009, from Thomson One Banker Analytics.
[12] Non-English terms will be in italics when first presented, with subsequent mentions not in italics.

COO of Toyota Motor Sales, U.S.A., returned to the company after two years as CEO of the Centrair International Airport near Nagoya, Japan (Japan Association for the 2005 World Exposition, 2003; Takenaka, 2009; Toyota Motors Sales, U.S.A., Inc., 2009).

Same Talent Ideal, Vastly Different Approaches

Despite their common pursuit of the 'Moon Shot' talent development ideal, General Electric and Toyota are as different as oil and water. Operational and system practices aside, just how different are they with respect to their talent management, instruments for change, leadership, and corporate culture? Consider the following comparison along these eight sub-categories: workforce diversity, cultural rigidity, worker productivity, promotional path, executive remuneration, strategic focus, financial practice, and succession planning.

Talent Management: Promotional Paths

As opposed to the 'up-or-out' performance-driven culture at General Electric where one either rises through the ranks or is pushed out, Toyota practices an 'up-and-in' culture, where one develops slowly and rises over time, which seems counterintuitive in a company where employees must work very hard and compete with each other. After the Japanese economic bubble burst in the 1990s and again during the recession of the late 2000s, when many companies (including General Electric) shed personnel, Toyota did not. By comparison, General Electric's personnel system systematically weeds out those who fail to meet performance and value expectations in the organization, anywhere from 5 to 10 percent of the workforce, company results notwithstanding. The speed of promotion inside each company is also very different. As of 2008, the youngest executive at Toyota was 52, while the average age was 61 years old (Toyota Motor Corporation, 2008c: 69). At General Electric, these figures were 49 and 55, respectively (General Electric, 2008b: 22).

Talent Management: Executive Remuneration

Both companies are stellar performers and executives from each one have been celebrated in U.S. magazines like *Fortune* and *Business Week*, yet their employee compensation levels are dramatically different. Despite its leading position in the auto industry, Toyota's average annual compensation for its top 30 executives is much lower relative to their counterparts at the other auto companies, and one sixteenth that of General Electric's (General Electric, 2008c: 20; Osono et al., 2008: 247; Toyota Motor Corporation, 2008c: 73).

Instruments for Change: Productivity

Although Toyota is famous for its efficiency, its allocation of human resources seems inefficient. Attend one of the many Toyota business meetings, either in or outside Toyota offices, and you will see many employees taking copious notes but not necessarily participating in the discussion. Decision making can be time consuming and detailed affairs. There are also an excessive number of employees working at the management level whose tasks bear no relation to operational or financial performance. I recall one occasion, while interviewing former CEO Katsuaki Watanabe, when four Toyota managers were also present but did not say a word during the entire one-hour meeting. In its sales organization, Toyota deliberately assigns more employees to regional offices than other auto companies do.

At General Electric human resources are constantly optimized, decisions get fast tracked, and meetings are two-way streets, with no room for ceremonial attendance. According to Bill Lane (2008, January 25), a 20-year General Electric veteran who was also former CEO Jack Welch's speech writer, the worst career catastrophes occurred when subordinates with a flimsy grasp of the presentation material tried briefing their superiors only to delay responding to probing questions. Participation in any activity implies grasping the details, regardless of who is running the show. If tasks are delegated, managers are

expected to fully understand what their subordinates are doing and make informed decisions on the spot. Rigorous and frequent performance reviews ensure that employees recognize how tasks impact operational or financial performance, otherwise their colleagues will know it – a sure path out of the company.

Instruments for Change: Strategic Focus

Toyota does not have a clear, strategic positioning. Rather, the company seems to try anything and everything in order to stay ahead of all the others in the auto industry, and it tries to be good at all of it. In other words, Toyota seems to lack 'focus' and 'discipline' to abandon dying products or services that tie down resources and limit productivity. This is not the case at General Electric, where growth dictates strategy and its business portfolio is chameleonic. In the 1970s, it sold its computer business. In the 1980s, it divested radio and television stations. In the 1990s, it shifted from manufacturing to financial services through acquisitions. More, recently it has divested its life and mortgage insurance business and its plastics and appliance divisions, to focus on high-growth segments such as health care and water processing technology.

Leadership: Financial Practice

There are peculiar differences between the practices of General Electric and Toyota that do not make sense from a financial perspective. Toyota's ratio of dividend payouts is very low, averaging below 20 percent of their earnings over the past ten years, about one third of General Electric's.[13] As a result, Toyota has accumulated a substantial amount of idle cash, which in 2008 amounted to over $16 billion, over two times that of General Electric's (with under $7 billion).[14]

[13] Financial figures sourced from Thomson One Banker Analytics and company annual reports (Toyota Motor Corporation, 2008; General Electric, 2007a).
[14] General Electric's cash figure excludes cash and equivalents held by General Electric Capital Services, Inc. and all of its affiliates and associated companies.

Looking at Toyota's performance, as measured by its Return on Equity, or ROE[15] (which has averaged just under 14 percent the past five years), shows that the company has not utilized stockholders' investments as productively as General Electric (ROE of over 18 percent), despite similarities in other growth measures, such as revenues, operating margin, and net income.

The sharp contrasts between high and low dividends, minimizing and hoarding idle cash, and utilizing shareholder capital productively or unproductively highlights how differently General Electric and Toyota prioritize financial resources, with the former commonly seen as an effective creator of corporate value and the latter as a wasteful and ineffective financial practitioner.

Leadership: Succession Planning

Succession planning at both companies is also quite different. At General Electric a deep bench of future leaders for transitions is groomed over many years through intense job rotations, numerous training sessions, and meticulous succession planning reviews known as the 'Session C.' The process to identify a new CEO begins six years before the appointment starts, with the company's board heavily involved. In 2007, the vice chairman at NBCU, the senior vice president of Human Resources, the CEO of GE Money, and the vice chairman of GE's Industrial division, all retired (General Electric, 2007a: 8). Each had been over 25 years at the company, a significant loss of talent that is difficult to replace at most firms. At General Electric their successors had been developed over decades.

At Toyota, members of the founding Toyoda family strongly influence succession planning even though their ownership is just 2 percent. Although non-family members have occupied the CEO position from time to time, the appointment in 2009 of Akio Toyoda, the

[15] ROE, or Return on Equity, is a measure of the efficiency to generate profit (or earnings growth) from shareholders' equity (invested capital from stockholders). It is calculated by dividing the Net Income (after preferred stock dividends but before common stock dividends) by total equity (excluding preferred shares).

grandson of Toyota founder Kiichiro Toyoda, as President and CEO marks the first time a Toyoda member has occupied the top post at Toyota since Tatsuro Toyoda vacated the position in 1995. Thus, the Toyoda family retains great influence over many important decisions, although its style of exerting influence is very different from other companies. Governance is not open and transparent and it is not clear to outsiders exactly how the family exerts influence.

Corporate Culture: Workforce Diversity

While Toyota is innovative, its senior management is still quite homogeneous, all male, and mostly Japanese. They are proud to be a company from the Mikawa region, a suburb of the major commercial city of Nagoya in Aichi prefecture, which is geographically and historically important in Japan as the birthplace of the first Tokugawa Shogun. Regional pride is strong in Japan and the company's provincial origins accounts for its still male-dominant culture, as well as its simplicity, and humility.[16]

At General Electric such pride takes a backseat to a determined pursuit of corporate performance and workforce homogeneity is taboo. An aggressive diversity strategy initiated under former CEO Jack Welch during the late 1990s swelled the company's U.S. ranks of women, minorities, and non-U.S. citizens from 22 percent of officers and 29 percent of senior executives in 2000, to 34 percent and 40 percent by 2005 (Hutchens, 2007).

Corporate Culture: Organizational Rigidity

The formal structure of Toyota is very hierarchical and bureaucratic, although the company, since the late 1980s, has reduced functional bureaucracy within departments by limiting stamp approvals (*hanko*) required within each department from eight to three. Despite flattening the seven layers of official status within each division to three – staff

[16] Toyota is headquartered in the city of Toyota in the region of Mikawa in Aichi Prefecture, central Japan. This is where Toyota was founded and continuous to be the location of the company's main production facilities in Japan. In essence, Toyota employees are 'proud to be from the countryside.'

manager, department manager, and general manager – many of the top executives remain inaccessible to middle managers, and there are clear indications of subtle differences in status at each level of management in the organization, reflecting the rigid social hierarchies in Japanese culture.

This kind of organizational and social stratification, or 'Wedding Cake Hierarchy,' was turned upside down at General Electric during the 1980s, when it simplified the organization from a dozen layers to just five (Krames, 2002: 199). The company also introduced initiatives such as 'work-outs' that diminished hierarchy by empowering employees to voice contrarian opinion and express new ideas regardless of their position within the organization.

Combined with the other highlighted disparities – in talent management, instruments for change, and leadership – the divergent practices at General Electric and Toyota adds to the mystique of these particular pair of companies that make their comparison all the more interesting and intriguing.

Chapter 2 - A Model of Capability Accretion

This chapter has two aims. The first is to develop a unique model of capability accretion, which is based on established theories on learning and elements from epistemological, organizational systems, and socio-psychological theory, that demonstrates how organizations can capitalize on individual and organizational experience to develop capability. The model looks at how capability develops over time, and how restraint to change in the organization, systems, and people degrades the accretion of capability. The second aim is to link this model to the capability booster framework of 'Moon Shot' talent development and how both function as instruments to describe the 'ecology' of capability accretion in an organization.

The formulation of the model of capability and the links to the capability booster framework are described in the following six sections:

- Experience and knowledge creation
- Learning from action
- From the individual to the organizational
- Capability from change
- The accretion of capability
- The organizational 'ecology' of capability accretion

2.1 Experience and Knowledge Creation

At every layer in an organization – from the outermost talent management to the deepest corporate culture – individuals construct knowledge from experience. Vince Lombardi, the legendary 20th century American football coach, once said, "Leaders are made,

they are not born. They are made by hard effort, which is the price which all of us must pay to achieve any goal that is worthwhile" (Estate of Vince Lombardi, 2006). The 'price' Lombardi refers to is not monetary, but the priceless aggregate of the anytime, anywhere learning that occurs every time a person copes with the new, the unknown, or the unexpected. Whether aware or not, Lombardi's notion regarding leader development parallels social construction theory, which argues that individuals are not born with already defined 'selves,' 'genders,' 'classes,' 'race,' etc., but that these are phenomena 'constructed' by participants in a particular social setting (Berger and Luckmann, 1966). Likewise, leaders are not born leaders, they *become* leaders.[17]

Consequently, an analysis of capability development must take into consideration the role of organizational, social, and cultural factors in the erudition process of because these are the starting points to develop ontological parallels relating experiential learning from the individual- to the organizational-level. This social constructionist view of learning serves as the theoretical foundation to develop a unique model of capability accretion that characterizes how a company's organizational 'ecology' – a composite of structural, operational, systems, social, and cultural factors that determine the nature, character, and extent of the learning environment – affects employee learning, knowledge creation, and ultimately capability development.

According to constructivist epistemology, individuals construct and internalize new knowledge based on their experiences through the processes of assimilation and

[17] The statement 'leaders are not born leaders, they become leaders' is based on the notion from the French existentialist Simone de Beauvior, who wrote "one is not born a woman, but rather becomes one" (1952: 267).

accommodation (Piaget & Inhelder, 1969: 5-6).[18] In the assimilation process, new experiences are internalized through the individual's unique frameworks that process and compartmentalize external stimuli. During this process the frameworks remain unchanged under three conditions: 1) internalized experiences align with existing internal representations of the world; 2) internalized experiences do not align with existing internal representations are dismissed as erroneous and invalid; 3) internalized experiences are incomplete and subsequently modified to align with similar internal representations. In the accommodation process, individuals reframe their internal representations of the world based on experiences that yield outcomes that contradict expectations based on past experience. Also, during this process, the frameworks that process external stimuli are modified to minimize future misinterpretation of similar circumstances, allowing individuals to learn from mistakes.[19] Knowledge gained from these processes can be functionally represented as follows,

$$\text{Knowledge} = \text{Assimilation} + \text{Accommodation} \qquad (1)^{*\,20}$$

$$K = AS + AC$$

[18] Epistemology is the branch of philosophy concerned with the nature and scope of knowledge, how it is acquired, and how and why individuals know what they know. Specific theories of knowledge creation include *empiricism*, which emphasizes experience based on perceptual observations from the five senses (sight, sound, touch, smell, taste), *rationalism*, where knowledge is acquired by processes independent of experience (*a priori*) or is innate (i.e. it already exists, just not discovered yet), and *constructivism*, where knowledge and meaning is 'constructed' by individuals based on their perceptual and social experiences (*posteriori*) in a given cultural context. Constructivism, as developed by Jean Piaget (1967), is the base theory of knowledge creation used in this study.

[19] Kolb (1984: 41-42) expanded Piaget and Inhelder's knowledge creation concept to include the role that grasping (apprehension/comprehension) and transforming (intention/extension) experience plays towards creating different kinds of knowledge (accommodative, assimilative, divergent, or convergent). The basic premise is that learning requires both a representation (grasp) of experience and a transformation of that representation, which is consistent with the view of Piaget and Inhelder used in this study.

[20] Original formulas created by the author are denoted by an * after the formula number. Formulas adapted from other sources are denoted by an ** after the formula number. Abridged versions of formulas will be shown below their respective full-text versions.

where knowledge (K) aggregates from assimilated (AS) and accommodated (AC) experiences.

In the constructivist view of knowledge creation, where knowledge is experientially constructed (Prawat & Floden, 1994: 37; Sosa, 1991: 194; Berger & Luckmann, 1966: 189), the individual's distinctiveness plays a vital role in the learning process.[21] So, even though a group of individuals can be exposed to an identical set of experiences, each individual constructs distinct and tacit knowledge based on their previous experiences and understanding of themselves, of others, and of their surrounding environment (Brohm, 2005; Polanyi, 1962; Argyris, 1956). Learning has three stages: 1) the acquiring stage, where information is distilled to filter true impact and important 'signals' from the 'noise' that obscures the message, 2) the interpreting stage, where information is discriminated into usefully relevant categorizations, and 3) the applying stage, where behavior is purposefully modified to reflect new knowledge and insight (Garvin, 2000: 21-26). However, learning is an ongoing dialectic process where social, behavioral, and cultural norms influence the synthesis of new knowledge (Edmondson, 2002; Raelin, 1997; Drucker, 1994; Nonaka, 1994; Brown & Duguid, 1991). Consequently, the constructivist learning process has four important aspects:

- **The distinctiveness of the learner makes the learning process unique.** Every learner has distinctive needs, backgrounds, and relationships with others that are complex and inimitable (Berger & Luckmann, 1966: 33). These distinctive combinations, once incorporated into the learning process, influence the

[21] The reason an individual's distinctiveness affects the learning process stems from the different frameworks inside each individual that internalize experiences and construct new knowledge. According to socio-psychological theory, the uniqueness of the individual frameworks is determined by several processes including 1) learning the socially-stratifying categories, which includes certain subset groups of individuals and excludes others, 2) participating in various discursive practices, 3) (imaginary) positioning of oneself in terms of the categories and discursive practices, and 4) recognizing oneself based on classifying characteristics specific to particular sub-classes and categories and not others (Davies & Harré, 1990: 47).

accommodation and assimilation processes in ways that evolve learning into a new and inimitable process in each individual (Wertsch, 1997: 23).

- **Both instructor and learner must adapt to optimize learning.** The interactive learning process requires both instructor and learner to play an active role to enhance understanding of taught content (Gergen, 1995: 38). The didactic emphasis has to shift away from the instruction of fixed content (e.g. scripted lessons, repeated behavior) towards the interactive delivery of dynamic content that conforms to the disposition and understanding accumulated by the learner (Rhodes & Bellamy, 1999: 25). This requires instructors to behave as 'facilitators,' teaching enablers who pace and adapt instruction to steer the learning experience towards areas of increased value, and learners to provide the feedback needed to adjust their learning experience.
- **Socio-cultural backgrounds shape the learning process.** Learning is a dynamic process where both instructor and learner reciprocally learn from each other (Tichy & DeRose, 2006: 64; Holt & Willard-Holt, 2000: 246). As learners and instructors share new experiences, their varied social and cultural backgrounds shape the construction of new knowledge as personal beliefs are socially-justified into new forms of truth (Kukla, 2000: 3; Nonaka & Takeuchi, 1995: 58).
- **The structure of instruction impacts learning.** The learning process is a social process, and the configuration of the learning environment influences how learners construct meaning. Autonomy allows learners to define and expand task boundaries to align with task objectives, which expands opportunities for exploration and discovery (Nonaka & Takeuchi, 1995: 76; Savery & Duffy, 1995: 2-3). Increased structure, in the form of fixed tasks, objectives, and exploratory parameters, coupled with misaligned instructor objectives and learner goals,

homogenizes the variety of the experiences from which new meaning and understanding are derived, limiting the creation of new knowledge.

The four idiosyncratic and context-dependent qualities of the experience-based learning process – how it both shapes and is shaped by interpersonal, social, cultural, and structural factors – are best summarized in the words of the British-American Poet T. S. Eliot, "We had the experience but missed the meaning. And approach to the meaning restores the experience in a different form" (1943: 27).

2.2 Learning from Action

Reginald William Revans, a specialist in the field of management education and organizational development, pioneered the first implementable, constructivist-based learning method when he developed the *action learning* process, a type of higher-level learning, while working in the Coal Board and hospitals in the U.K. during in the 1940s.[22] According to Revans, action learning is "a means of development, intellectual, emotional or physical, that requires [learners], through responsible involvement in some real, complex, and stressful problem, to achieve intended change to improve [their] observable behavior in the problem field" (1982: 626-627).[23]

In the action learning process, learners work in groups studying their own actions and results to create new insights that guide future actions alongside a facilitator who stimulates and guides discussions. Knowledge that emerges as learners reflect on their experiences then

[22] Other examples of social constructivist inspired learning approaches include *situated learning*, where learners master complex material through apprenticeships, *collaborative learning*, during which learners and instructors share knowledge through cooperative activities to build new knowledge as a group, and *anchored instruction* that focuses instruction on creating solutions to issues of collective interest to the group of learners.

[23] Research in the field of action learning is very active, especially since the 1970s, and this summary is intended to provide a cursory overview. For a more comprehensive look see Judy O'Neil and Victoria Marsick's book, *Understanding Action Learning*, which provides a thorough background of the action learning process, including an interesting section on the learning theories underpinning the various schools of action learning (2007: 176-178).

leads to increased capability through improved skills and higher performance. The process is very useful in situations characterized by uncertainty, where information is insufficient, and clear-cut solutions do not exist. Four essential conditions are needed for the method to be effective: learners must 1) identify what they do not know before 2) asking probing and insightful questions about their area of ignorance 3) alongside others who also lack the same knowledge as 4) they together share new experiences. Revans' action learning is performed in four schools of practice:

- **Scientific**, based on Revans' original concept, where learners methodically check their new knowledge against 'reality' through critical inquiry following a hypothesis-driven approach.
- **Experiential**, where learners reflect, compare against expectation, and share experiences derived from trialing new methods in repeated cycles that create new experiences and new knowledge that guide future inquiry (also known as learning spirals or cycles (Kolb 1984: 33, 42; Lewin 1948: 206)).
- **Critical Reflective**, which is similar to the experiential school, except that learners also consider how perceptual filters (e.g. preconceptions, societal norms, beliefs) distort the reflection and assessment of their experiences and learning (this approach is based on Argyris and Schön's (1978: 2-3) higher-level concept of 'double-loop' learning).[24]

[24] The learning steps of the experiential/reflective schools of action learning practice (i.e. reflect, compare, share experiences, create new knowledge) form a loop where new experiences and knowledge guide future inquiry and learning. This loop parallels the feedback loop used to control dynamic behavior in the interdisciplinary (mathematics and engineering) field of control theory, where the measured output of a system is compared against a reference (or target output) over time, and any resulting deviation (error) results in adjustments (control) to the inputs that affect the system until the desired output is reached. See Franklin, Powell, and Emami-Naeini (2002) for details on dynamic control systems.

- **Tacit**, where learners derive new knowledge incidentally from the process of overcoming obstacles and meeting challenges as a team (Tichy & Bennis, 2007: 43).

In the action learning process, the learning of an individual depends on programmed instruction from validated experiences (i.e. expert knowledge that is symbolic, codified, explicit, and easy to convey) and questioning insight gained from discriminating inquiry of experience using four principle questions (Where? Who? When? What?) and three supportive questions (Why? How many? How much?) (Revans, 1981: 139-140). In its simplest formulation, the action learning process is an additive operation,

$$\text{Learning} = \text{Programmed Instruction} + \text{Questioned Insight} \qquad (2)^{**}$$

$$L = P + Q$$

where learning (L) is the aggregate sum of knowledge created from programmed instruction (P) and questioned insight (Q) (Revans, 1980: 137).

2.3 From the Individual to the Organizational

Since groups of people, such as a circle of friends, a class of students, or a company workforce, are socio-ontological constructs (i.e. collections of individual entities), the constructivist view of the knowledge creation process can be extended from the single-entity context to the multi-entity, socio-dynamic context, such as groups of relationally-interactive individuals (Vygotsky, 1978). Just as individuals generate individual-level knowledge and meaning based on their own experiences, groups of individuals will generate unique group-level knowledge (including common behavioral norms, values, and beliefs) based on mutually shared experiences, the web of socio-emotional interactions interconnecting them,

and the distinctiveness of each group member (Nonaka, 1994: 23; Kogut & Zander, 1992: 396). Consequently, as in the words of American poet Maya Angelou, "People will forget what you said, people will forget what you did, but people will never forget how you made them feel" (2004:148), these social peculiarities are what contour the formation, retention, and recall of experiences and shape the creation of new knowledge.

Shifting to a dynamic perspective, a 'learning organization' is then a socio-ontological construct that purposefully modifies its collective behavior, values, and beliefs to reflect newly created knowledge and insight among the individuals inside the organization (Garvin, 2000: 11). Training is the one key area where employees, irrespective of their position within an organization, can engage in highly interactive virtuous learning cycles where knowledge that develops performance-enhancing capability is co-created – mutually exchanged from instructor to learner and vice-versa (Tichy & DeRose, 2006: 64). Coworker interaction during training activities also facilitates the transfer of know-how from individual to individual, individual to group, and group to groups, in ontologically expanding spirals where compartmentalized tacit (i.e. intangible, difficult to convey and replicate) and explicit (i.e. tangible, codified, easy to convey and replicate) know-how is dialectically transformed into new forms of knowledge that diffuse throughout the organization (Nonaka & Takeuchi, 1995: 55).[25] And the more prolific these learning cycles and spirals are in an organization, the more fertile and intense the transfer and creation of knowledge sourced both from within and without the firm (Nonaka, Toyama, & Hirata, 2008: 18-19).

2.4 Capability through Change

Catalyzing the creation and transfer of knowledge in a company is a critical process from a business strategy perspective, since it can stem two of the greatest failures of

[25] Any activity, not just training, can give rise to new knowledge because whenever individuals interact in a dynamic socio-cultural context, new experiences (and knowledge) are created and shared (Nonaka, 1994: 17-19; Brown & Duguid, 1991: 41; Lave & Wenger, 1991: 30).

management – the myopic focus on the product instead of the customer's need and the inability to move beyond proven methods created by past successes.

A misplaced focus on product blinds management to impending product, service, or process obsolescence, which could sink the firm into corporate extinction (Levitt, 1960: 145). Avoiding this outcome requires incorporating knowledge culled from both within and without the organization into the decision-making and development processes. Only then can management make informed, qualified choices that lead to positive change, create customer value, and evolve the company onto a path of sustained development and progress.

Moving beyond proven methods created by past successes is a trickier problem. Once standardized into rigid and reproducible practices (i.e. skills, routines, and processes), either operationally through learning curves,[26] or socio-psychologically through organization-specific stereotyped behavior,[27] these methods become indispensable to the efficient and productive execution of activities. However, these same methods also intensify dependence on fixed patterns of legacy practices that impair organizational adaptability when confronting unanticipated change in the business environment (Nelson & Winter, 1982: 21; Hannan & Freeman, 1977: 930). This leads people in organizations to get attached to the obsolete – the actions that should have worked but did not, the activities that once were productive but no longer are (Drucker, 2008: 54). To overcome the stagnation of outmoded methods and cope with the unexpected, practices must be sufficiently accommodating to overcome the rigid demands required for the efficient execution of activities (Schneider, Brief, & Guzzo, 1996).

[26] The learning curve argument states that routines improve and become increasingly efficient with repeated practice, and the rate of improvement is predictable. For example, in their analysis of prices and manufacturing costs at Ford, Abernathy and Wayne (1974) show how the price of the standard Model T dropped from over $5,000 to $900 after eight million units were produced, implying Ford's learning curve was 85 percent (for each doubling of total Model T production, prices dropped to 85 percent of the previous level).

[27] Stereotyped behavior is an efficient form of behaving that uses judgmental heuristics, or mental shortcuts (e.g. trust expert opinion, unquestioningly obey authority, associate a higher price with better quality, behave in accordance or agreement with the majority) that simplify the everyday decisions individuals make as they cope with too much information and too little time to process it (Cialdini, 2001: 7-9).

Consequently, an organization's *structured* side – its hard-ness stemming from the fine-tuning, reproducibility, reliability, and efficiency of existing practices – is coupled to its *flexible* side – its soft-ness to replace, create, innovate, and incorporate new skills, routines, and processes.[28] Both sides depend on and affect each other and are equally important as they together determine the direction of capability potential of the organizational whole, like two wheels connected by a shaft, as illustrated in Figure 1-1 of Chapter 1. In an ideal organization, both wheels have the same size, bear equal weight, and move in unison.

The two sides of the organization can be experientially improved, either incrementally through the fine-tuning, reproduction, standardization, and efficiency of existing practices (referred to as 'structured' change), comprehensively by replacing, inventing, innovating, and incorporating new practices ('flexible' change), or by combining the two. Regardless of the approach taken, the aim is always the same – to balance the tension between the need for 'structured' continuity and the demand for 'flexible' transformation in order to develop performance-enhancing capability throughout the organization.[29] Consequently, capability depends on the incorporation and cultivation of organizational change. Combined with the premise that experience-based knowledge and learning aggregates, as outlined in the constructivist knowledge (1) and action learning formulas (2), leads to the following additive representation of capability,

$$\text{Capability} = \text{Structured Change} + \text{Flexible Change} \qquad (3)^{*}$$

$$C = S + F$$

[28] The concept of an organization's structured and flexible sides mirrors the adaptor-innovator theory, where problem-solving is 1) limited by structure (i.e. knowledge at hand, information patterns, the way an individual is built), 2) affected by motive and opportunity, and 3) occurs at different levels and styles (e.g. adaptors prefer structured problems, innovators prefer loose guidance) (Kirton, 2003: 4).

[29] The notion of balancing between continuity and transformation is similar to Peter F. Drucker's statement: "Management has to maintain the dynamic equilibrium between change and continuity" (2004: 265).

where capability (C) aggregates from the cultivation of experience-based structured (F) and flexible (A) changes to an organization, be it a group of individuals, a team, a business unit, or an entire company.[30] However, there are problems with this formulation. It does not take into account the coupled dependence between the structured and flexible sides nor the constraining effect that organizational factors place on the fine-tuning and replacement of capability-enhancing skills, routines, and processes. Resolving this requires looking at the accretion of capability over time.

2.5 The Accretion of Capability

Learning a new skill or improving an existing skill (say riding a bike) is typically a one-way process; to gain expertise you have to go through the learning curve at least once. Forgetting and relearning a skill does not necessarily enhance ability beyond what was previously achievable in the past, assuming that skills are learned correctly the first-time around and that improvement gains become obsolete once any potential benefits have accrued (Drucker, 1992: 281).

From a performance perspective, this implies that increasing capability is also a one-way and somewhat entropic process, where the final level of ability depends on both the method and the effort used to improve. For example, boiling an egg happens faster with increased heat but is irreversible (the egg cannot be un-boiled). While it is possible for performance to decrease as capability becomes lost or inaccessible, typically through the misuse, disuse, or obsolescence of skills, routines, and processes, learning and capability typically develop in such a way that subsequent performance gains become increasingly

[30] If capability-enhancing structured (S) and flexible (F) changes in an organization are characterized as experiential and learning-based, these changes can then be represented as compositions of independent functions (f_n) of the action learning process (2), such that $S = f_1(L) = f_1(P + Q)$, and $F = f_2(L) = f_2(P + Q)$. Therefore (3) can be rewritten as $C = S + F = f_1(P + Q) + f_2(P + Q)$, showing that capability (C) depends on learning and knowledge derived from programmed instruction (P) and questioned insight (Q).

difficult to achieve as improvements become fossilized into the record of capability heritage. This has five implications with respect to the accretion of capability over time:

- **Capability is bounded by experience.** Practicing and repeating a skill, routine, or process improves how well it is performed. But the intensity of improvement invariably slows as expertise in the particular task approaches the limits bounded by learning curves (Adler & Clark, 1991; Abernathy & Wayne, 1974) and the efficient allocation of scarce resources (e.g. people, capital, time). Past experience also strongly influences the pace and direction of future growth and development (Penrose, 1959: 5).
- **Capability is bounded by compatibility.** Although improving existing practices can increase operational efficiency and productivity, the *modular coupling* of existing systems limits the compatibility of new practices (Orton & Weick, 1990: 218-219). [31] Low organizational modularity also creates barriers against the adoption of external practices that can mitigate environmental uncertainty and change (Miller, 1992: 175).
- **Capability is bounded by familiarity.** Lack of knowledge regarding the uncertain, the untested, and the unproven can inhibit reasoning and constrain innovation (Edmondson & Moingeon, 1999: 160). This makes it difficult for organizations to avoid the 'competency trap,' where breaking with the past and exploring the new takes a backseat to the myopic and rote improvement of

[31] In systems theory, *modular coupling* refers to the degree (from low to high) that a process can be decomposed into base components that can be recombined into configurations of equal or greater functionality. Loosely coupled systems (high modularity) can be reconfigured more easily, or are more compatible with external processes, than tightly coupled systems (low modularity). Example of highly modular process components include back office IT operations, call-centers, and facilities maintenance, among others, while low modular process components include integrated design and manufacturing lines that cannot be operationally subdivided or outsourced without lowering efficiency.

obsolete practices considered indispensable to the continued success of existing operations (Levinthal & March, 1993: 105-106).

- **Capability is bounded by motivation.** The perceived loss in capability from the abandonment of current practices in favor of cutting-edge, unfamiliar skills can increase opposition to change. Similarly, the pendulic loss-gain-loss swing in ability from relearning rarely used, high-maintenance skills (e.g. foreign language) or upgrading/supplanting/replacing existing processes (e.g. upgrading software) can engender frustration that motivationally undermines learning and prevents capability from developing beyond the peak limit of past ability (Atherton, 1999: 77). A related factor is the lack of a 'secure base' that curbs curiosity, exploration, experimenting, and risk taking.[32]
- **Capability is bounded by bias.** The preponderance of stereotyped socio-emotional, associative, and impressed behaviors can lead to intra-organizational roadblocks that impede acceptance of new ideas and stunt creativity. The most counterproductive indicators include managerial biases that are affective or cognitive and the prevalence of affective, cognitive, or conative prejudicial attitudes (Roberto, 2005: 20-21, 23; Farley, 2004: 18-19).[33]

[32] The term 'secure base,' as coined by developmental psychologist Mary Ainsworth (1967: 346), refers to an attachment behavior pattern where an individual (e.g. a child) feels secure enough in the perceived presence of a superior (the caregiver) to explore beyond the confines of known limits (the play area). Absent the feeling of security, the individual becomes uncomfortable and unwilling to explore beyond known limits. This secure-type behavior pattern is derived from John Bowlby's (1960, 1988) socio-psychological theory of attachment (developed during the 1950s and 1960s), which looks at the interpersonal relationships between individuals.

[33] There are two basic types of managerial biases: 1) affective, where differences and disagreement are resolved through emotional and personal conflict, and 2) cognitive, where information collection is biased against data that contradicts existing positions. Prejudicial attitudes are categorized into three types: 1) cognitive, which adhere to what an individual believes to be true, 2) affective, which are based on the individual's likes and dislikes, including socially constructed 'in-' and 'out-groups,' and 3) conative, which are unaffected by an individual's feelings. Other behavioral patterns that limit learning include judgmental heuristics (see note 24) and (un)planned behavior, the psychological theory that relates an individual's consideration of behavioral, normative, and control beliefs to the individual's intention to perform a specific behavior (Ajzen, 1988: 132-136).

Consequently, the accretion of capability slows over time, attenuated by a resistance bias, or *restraint*, composed of tangible (e.g. resources constraints, rigidness of process structures, systems modularity) and intangible (e.g. past experience, familiarity, motivation, biases) factors. This restraint affects organizational practices, policies, and behavioral norms in favor of fine-tuning and efficient operation of the known over its replacement with something unfamiliar, uncertain, or untested. Returning to the two-wheel analogy, this means favoring one wheel of the over the other, resulting in the lop-sided development of the organization (Figure 2-1).

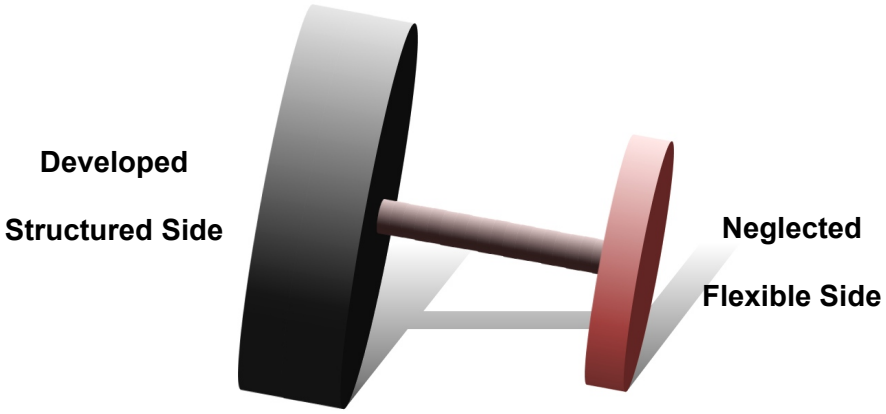


Figure 2-1. The Lop-sided Organization.

Note. The uneven development of the structured and flexible sides of an organization creates an instability that makes it difficult to control the direction of capability development of the organizational whole. Created by author.

To avoid falling onto a path towards stagnation and decline, companies must align their structured and flexible sides and breakdown the resistance bias that creeps into organizations as practices mature and structure overwhelms flexibility (Edmondson, 2002: 143; Hannan & Freeman, 1984: 149). Only then can they breach the capability 'plateau' that

demarcates the limits of existing practice – the point at which capability accretion is fully constrained and stops increasing – and move towards the 'frontier' where new replacement skills, routines, and processes expand capability beyond existing limits (this process is depicted in Figure 2-2). In other words, to continue to develop and grow, companies must learn to 'unfreeze' the 'old' constraining ways before the 'new' can be acquired.[34]

The variegated and context-specific nature of experience-based learning and knowledge creation makes it difficult to exactly describe how *restraint* from systems-specific and socio-cultural factors affect the *structured* and *flexible* sides and accretion of capability in an organization. However, it is possible to establish a relative relationship based on the trend that increased restraint lowers capability accretion over time (as shown in Figure 2-3). The additive representation of capability (3) can then be modified to,

$$\text{Capability} = \frac{\text{Structured Change} + \text{Flexible Change}}{\text{Restraint}} \qquad (4)^{*}$$

$$C = \frac{S + F}{R}$$

where the accretion of capability (C) is inversely proportional to restraint (R) – a composite factor that describes how conducive (or resistive) existing practices, policies, and socio-cultural norms are to accommodate capability-imparting structured (S) and flexible (F) change i.e. the adjustment of existing, incorporation of new, or abandonment of obsolete skills, routines, and processes.

[34] The notion of 'unfreezing' the 'old' before learning the 'new' is based on Lippitt and Radke's (1946) study, "New Trends in the Investigation of Prejudice," which looks at the dynamic and sociological factors in the research of prejudice.

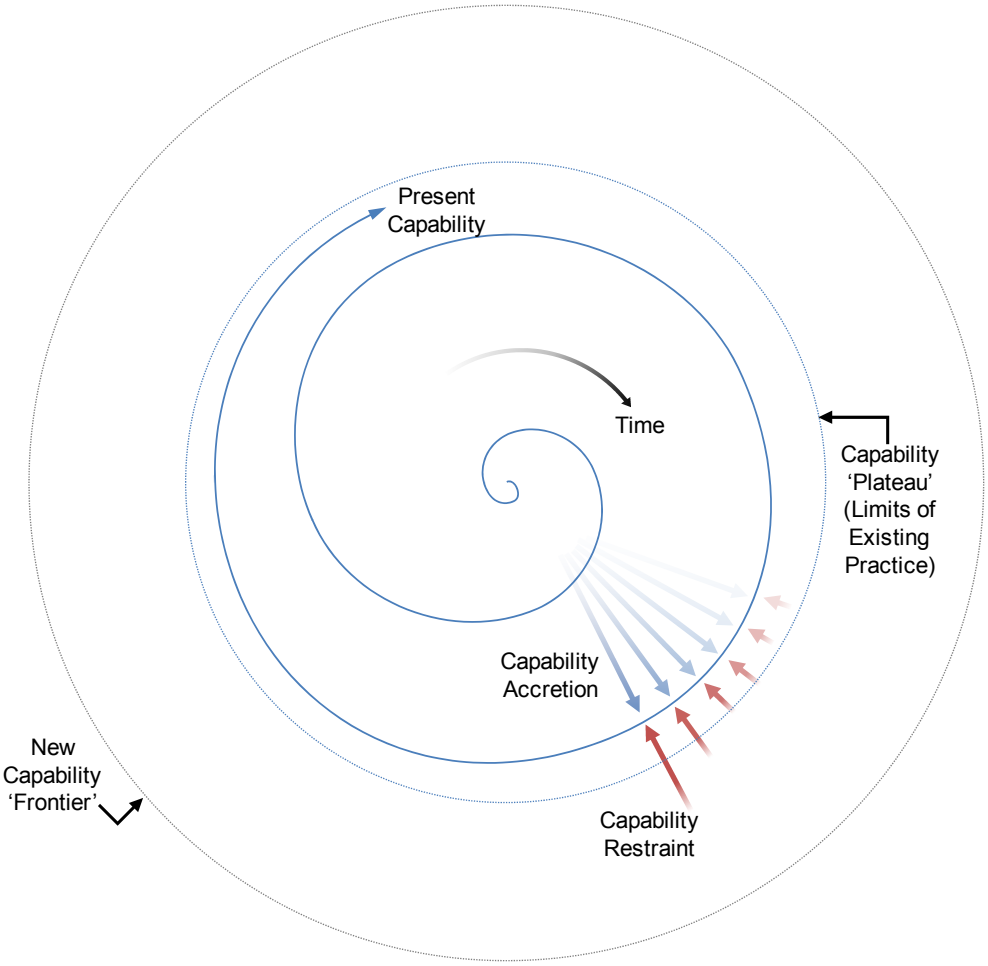


Figure 2-2. The Capability Spiral.

Note. Capability (the expanding spiral whose distance from the origin represents increased capability) develops over time (clockwise) as practices are fine-tuned, standardized, reproduced, and efficiently executed. Eventually, capability accretion (outward-pointing arrows) diminishes, counteracted by a restraint (inward-pointing arrows) that intensifies as organizational practices and norms mature, become rigid, and resistance to replace proven and established practices with unfamiliar, uncertain, or untested methods mounts. The point where accretion becomes fully constrained defines the capability 'plateau' – the limit of existing practice (inner dotted circle) – which is breached only after the restraint to change is overcome, allowing the replacement, invention, innovation, and incorporation of skills, routines, and processes that expand capability towards a new 'frontier' (outer dotted circle). Created by author.

Unlike the previous additive representation of capability, this *model of capability accretion* couples the structured and flexible sides of an organization to its restraint to change**.** So, as restraint increases, the accretion of capability become less pronounced, regardless of how competent the organization is at fostering structured change (i.e. adjusting existing practices) or flexible change (i.e. exploiting new practices). The following example illustrates this point.

Company X is a mature, low growth business whose systems and processes are highly developed, complicated, and efficient compared to its respective industry average, and change (structured and flexible) is resource-intensive, costly, and difficult to achieve. To harvest as much capability from the incremental, limited, and infrequent developmental opportunities it experiences over time, company X must tweak its internal organizational factors into a configuration that minimizes development restraint.[35] Now consider X's rival, company Y, where change is just as resource-intensive, costly, and difficult to achieve as in company X. If both have similar levels of capability, are equally constrained with respect to tangible resources, and are changing at similar paces, then differences in capability development over time between both companies, based on the model of capability accretion (4), will depend on their respective restraints, as shown in Table 2-1.

[35] Examples of initiatives that can realign the internal configuration of the organization and minimize development restraint include allocating sufficient resources to support development efforts, instituting cross-functional cross-divisional collaborations to curb silo mentalities/barriers to externally sourced ideas, and increasing data sources to reduce information bias. For the purposes of this conceptual example, company X is assumed to be capable of reconfiguring and altering its restraint to capability development.

Table 2-1.

The Impact of Restraint on Capability Accretion over Time.

	Change			
	Structured (S)	Flexible (F)	Restraint (R)	Capability (C)
Initial Conditions	X ≈ Y	X ≈ Y	X ≈ Y	X ≈ Y
Conditions over Time	X ≈ Y	X ≈ Y	X < Y	X > Y
			X ≈ Y	X ≈ Y
			X > Y	X < Y

Note. If two rival companies, X and Y, are initially similarly capable, resource constrained, and changing at a similar pace, then any difference between them in terms of capability development over time will depend on their respective restraints. Created by author.

Now consider company Z, a developing business where practices are constantly fine-tuned and/or replaced to cope with the demands of high growth, providing substantially more opportunities to change relative to company X, its competitor. However, because of organizational 'immaturity' and inefficiency, Z sometimes fails to latch onto and replicate performance-enhancing improvements from the many 'white noise' changes in its activities i.e. it does not incorporate or cultivate improved skills, routines, or processes. This restrains Z's ability to develop capability vis-à-vis company X. Assuming Z's capability is initially lower than company X's, the only way it can develop capability beyond X is through constant and rigorous change. However, such an intense pace of development is difficult to maintain once growth stabilizes and reaches equilibrium (i.e. when Z's growth converges with that of

its competitors), resources become scarce, and change infrequent – conditions mirroring those of a mature, low growth business. Consequently, to avoid stunting capability development prior to reaching equilibrium, company Z must reconfigure the organizational factors restraining its accretion of capability. Otherwise, it risks underperforming (or at best just matching) company X in terms of capability, as shown in Table 2-2.

Table 2-2.

The Impact of Restraint on Capability Accretion at Equilibrium.

	Change			
	Structured (S)	Flexible (F)	Restraint (R)	Capability (C)
Initial Conditions	$X < Z$	$X < Z$	$X < Z$	$X > Z$
Conditions at Equilibrium	$X \approx Z$	$X \approx Z$	$X > Z$	$X \leq Z$
			$X \approx Z$	$X \approx Z$
			$X < Z$	$X \geq Z$

Note. Company Z is initially resource unconstrained, changing at a greater pace, but less capable relative to company X. Its capability level compared to X at equilibrium, when the pace of change and resource constraints are equal in both companies, will depend (partly) on the initial differences in capability and pace of change, and (mostly) on its restraint relative to X. Created by author.

For companies X, Y, and Z, or any enterprise situated between the extremes represented by these three, the message is clear: *the lower the restraint to change, the more effective and intense the accretion of capability*. Alternately, the higher the restraint the less effective and intense the accretion of capability.

2.6 The Organizational 'Ecology' of Capability Accretion

In practical terms, the model of capability accretion (4) explains the 'diminishing returns' of learning and performance: why an employee's thirty years at the same company can be equivalent to only five years experience. During the first five years, experiences were fresh, full of many 'firsts,' and capability accrued (i.e. ample structured and flexible changes). However, after this initial 'honeymoon' period of development, the employee stops learning and instead re-experiences a repackaged set of old experiences (i.e. fewer structured and flexible changes). This is when past practice increasingly becomes the menu of choice that guides decision-making and future action (i.e. increasing restraint) and capability accretion tapers off (Argyris, 1956: 25).

Overcoming the 'diminishing returns' of learning requires an organizational environment where incorporating change boosts the learning process and the accretion of capability yet does not inhibit learning – an environment where the development process is dynamically reinvigorated and enriched. This means internalizing new experiences, not re-experiencing the old. One way is using old skills in new ways. In the bicycle example, this could mean riding down different paths, riding with different partners, using different bicycles, or even performing disassembly, repair, and reassembly tasks. Changes like these reinvigorate what would otherwise be stale routines by individuals or groups, creating fresh experiences that can trigger new experiential learning and performance improvement (Kolata, 2009: E1; De Rond, 2008: 28).

But despite the benefits that simple changes to existing practices can impart on learning and capability development, the tendency to follow established behavioral patterns and routines, especially among organized groups, is hard to ignore and harder to break, even when practices are recognized as outmoded, inefficient, or outdated. The factors contributing

to learning and capability restraint are varied, but can be classified into two types: tangible factors and intangible factors.

The tangible factors are linked to the operational aspects of an organization. These include the allocation of limited resources (e.g. human, capital, and time to practice and learn new things), the rigidness of process structures, the demands for reproducibility, standardization, and efficiency, as well as the modularity of existing systems.

The intangible factors are related to the socio-cultural and behavioral tendencies in an organization. These include the avoidance of practice abandonment, clinging to obsolete ways, rejection of foreign ideas, associative biases, difficulties separating signal from noise, and relying on limited data sources. Other intangible issues include sentiments and emotions that affect the motivation to learn or change (e.g. prejudicial dispositions, judgmental overconfidence, confrontational inclinations, situational apprehensions, fear of failure). The aggregate impact of these intangible issues can sharply curb reasoning, inventiveness, and creativity in an organization (Garvin, 2000: 42).

Based on these varied tangible and intangible factors, the restraint term (R) in the model of capability accretion (4) can be decomposed into three constituent components, as follows,

$$\text{Capability} = \frac{\text{Structured Change} + \text{Flexible Change}}{\text{Restraint}_{\text{Rigidity}} + \text{Restraint}_{\text{Inertia}} + \text{Restraint}_{\text{Norms}}} \qquad (5)^{*}$$

$$C = \frac{S + F}{R_R + R_I + R_N}$$

where the accretion of capability is inversely related to the operational rigidity (R_R) against adjusting existing processes, organizational inertia (R_I) against adopting new processes, and

underlying (socio-cultural and psychological) norms (R_N) that constrain learning, knowledge creation, and the development of capability.[36] The three constituent components of restraint (R_R, R_I, and R_N), and the impact they impart on the cultivation of structured and flexible change, characterize the organizational 'ecology' of capability accretion – how adept the organization is at fostering and incorporating capability-imparting change.[37]

The model of capability accretion with the expanded restraint term (5) represents the theoretical keystone of this study. It combines three lines of theory – epistemological, organizational systems, and socio-psychological – into one unified paradigm that operationalizes how restraint (of operational rigidity, of organizational inertia, and of socio-cultural/psychological norms) curbs learning, knowledge creation, and ultimately, the development of performance-enhancing capability. The concepts from each theory line, and their role in the derivation of the capability accretion model, are shown in Figure 2-3. This model relies on three key assumptions:

1. The capability development of continuously improved practices (skills, routines, or processes) that are not replaced tapers off as it approaches a limiting maximum, or 'plateau.'
2. An unlimited number of higher-level capability 'frontiers' exist.
3. Endeavors to foster capability-enhancing structured and flexible change are in force in the organization.

[36] Decomposing the restraint (R) term in the model of capability accretion (4) into constituent factors of rigidity (R_R), inertia (R_I), and norms (R_N) pays homage to the critical reflective school of action learning, which considers the distorting effect of perceptual filters (e.g. prejudices, biases, cultural norms) on experience and learning.

[37] The notion of the organizational 'ecology' of capability accretion is not to be confused with the concept of organizational 'climate' as first developed by Lewin, Lippitt and White (1939) and expanded on by Ekvall (1983). The difference is that the 'ecology' affects capability development while the 'climate' influences organizational creativity.

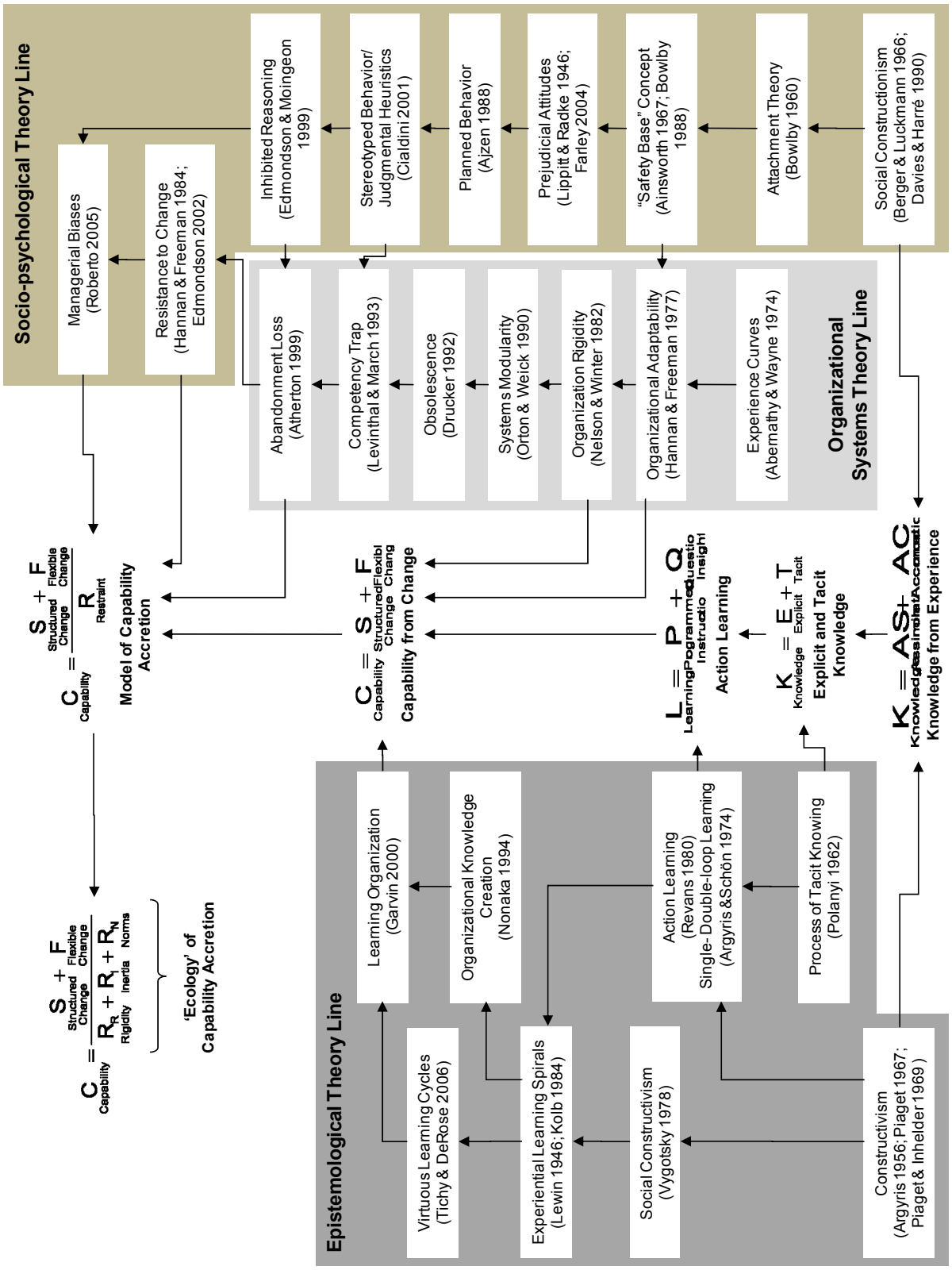


Figure 2-3. The Theory Lines of the Model of Capability Accretion.

Note. The chart shows the bottom-up development of the model of capability accretion, including the epistemological, organizational systems, and socio-psychological concepts used in its derivation. Created by author.

Organizational 'Ecology' and the Capability Booster Framework

It is now possible to link the model of capability accretion (4) and the organizational 'ecology' of capability accretion (5) to the capability booster framework and show how the three concepts are interconnected. As explained before, the capability booster framework consists of three blocks: *enhancing structure*, *catalyzing flexibility*, and *lowering restraint*. Each block is linked to one factor of the model of capability accretion as follows (see Figure 2-4):

- *Structured Change* corresponding to the *Enhancing Structure* block (at the top-left corner of the capability booster framework)
- *Flexible Change* corresponds to the *Catalyzing Structure* block (the top-right corner)
- *Restraint* corresponds to the *Lowering Restraint* block (at the bottom)

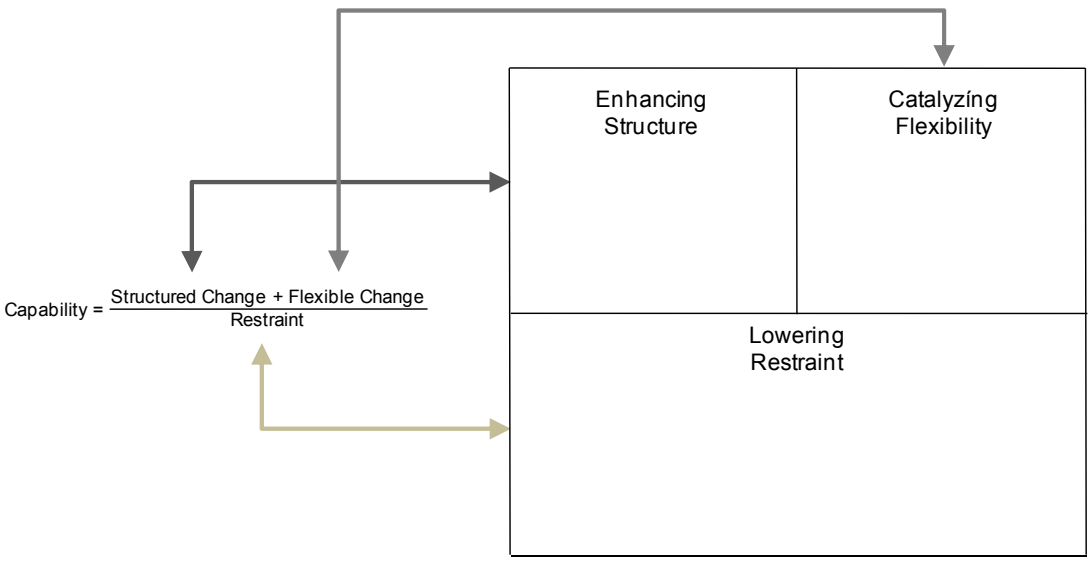


Figure 2-4. Linking the Model of Capability Accretion (left) and the Capability Booster Framework (right).

Note. Created by author.

These linkages enable the capability booster framework to serve as the mechanism to comprehensively assess capability accretion in organizations such as General Electric and Toyota. This assessment is comprised of capability booster frameworks populated with discrete training practices, methods, and conditions that significantly advance (or impede) capability accretion (i.e. structured change, flexible change, restraint) in each organizational layer, starting with the outermost *Talent Management* layer (Chapter 3), then proceeding through the progressively deeper layers of *Instruments for Change* (Chapter 4), *Leadership* (Chapter 5), and *Corporate Culture* (Chapter 6).

The ensuing layer-specific booster frameworks then merge into a unified evaluation that characterizes the unique 'ecology' of capability accretion in the firm, as shown in Figure 2-5. This unified evaluation, which has the same basic three-block structure as the capability booster framework, makes possible the side-by-side comparison (in Chapter 7) of the distinct 'ecologies' of capability accretion at General Electric and Toyota – the nurturing environments that routinely push the limits of organizational development and performance-enhancing capability.

The next chapter looks at the outermost layer where capability develops at General Electric and Toyota – the talent management infrastructures – and how both companies develop people over the long-term by blending formal instruction with experience-building job rotations to support growth at every career stage.

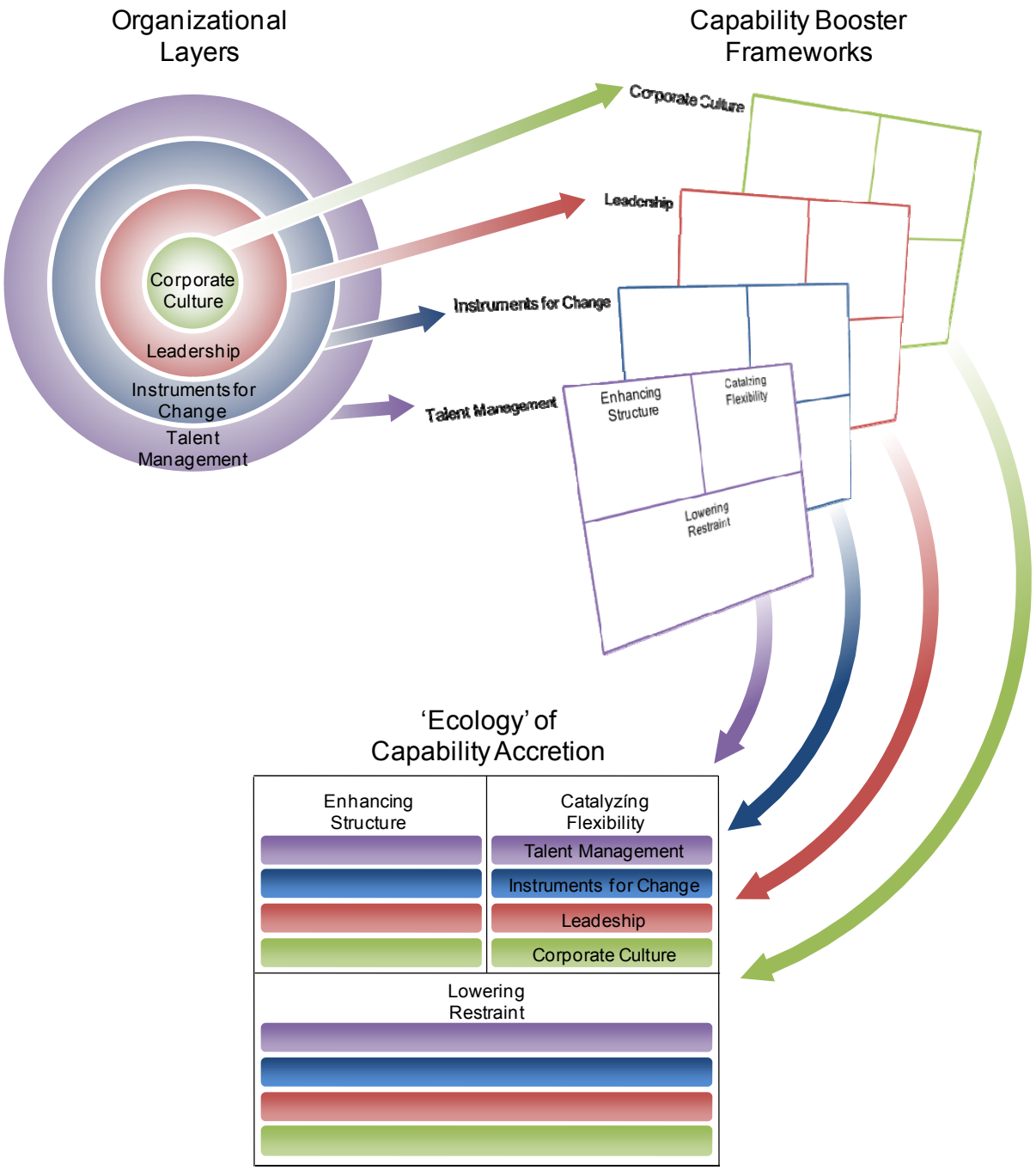


Figure 2-5. Linking the Organizational Layers, Capability Booster Frameworks, and the 'Ecology' of Capability Accretion.

Note. Created by author.

Chapter 3 - Talent Management Infrastructure

In the industrial age, one key driver for success was higher efficiency relative to competitors. That is, minimal production waste, manufacturing flexibility, cost and quality leadership, product reliability, and nimble responsiveness to market changes. In that setting, the focus is on developing systems or innovations that drive structured change in the organization. In General Electric's case, that included six sigma process management, enhanced margin and cycle time goals across all product lines, material cost reduction, and global best-cost sourcing (General Electric, 2007a: 7). In Toyota's case, it was the Toyota Production System (TPS), its fast product development, and its logistics and quality management.

However, in the knowledge age, a hard-nosed approach to efficiency is not enough to sustain growth. As competitors vie for a greater share of a finite market, they invariably emulate each other's best practices, leading to undifferentiated cost structures and the rise of price-driven and profit-eroding market competition. Breaking out of this unsustainable deadlock of cutthroat competition requires that companies make aggressive investments to train and develop employees to increases their capabilities and open new avenues for growth. This is a long-term investment, even lifelong, with the need for continuous upgrading of skills. Keeping employees up-to-date and motivated requires excellent educational programs and the commitment of resources to an extent that cost-sensitive rivals cannot or are unwilling to match.

Companies have three levers for the large-scale development of talent in the knowledge age. The first is creating a system that integrates training, experience building,

and succession planning. The second is an across-the-board approach to employee development that cascades learning across the organization and reinforces core company practices and values. The third is the strict screening and evaluation of personnel to get those who are predisposed to the company's core values into key positions.

This chapter elaborates on the three levers for large-scale talent development as practiced by General Electric and Toyota, and how these combine learning, experience building, and adherence to core values into a 'Moon Shot' paradigm of talent development. Specifically, both companies have established integrated training infrastructures that develop employees over the long-term, combining experience-building job rotations with formal training to support growth at every career stage, and are distinguished by the following characteristics:

- An unwavering commitment to training, training, and more training
- Long-term employee development up the organization
- Rigorous assessments to enhance organizational fitness

3.1 An Unwavering Commitment to Training, Training, and more Training

Very few companies can match General Electric's commitment to employee development. It habitually spends over $1 billion a year on training to foster growth traits such as clear and decisive thinking, external focus, expertise, inclusiveness, and imagination in its employees (General Electric, 2009c; the traits are described in Chapter 5). This amounts to over three times the average per employee expenditure of other companies (Bersin & Associates, 2008, January 29), even during the global recession from 2007 to 2009.

Every year nearly 10,000 employees attend courses on topics including leadership, strategy, innovation, business impact, and change management at the company's 53-acre John F. Welch Leadership Development Center (Crotonville) corporate learning campus in

Ossining, New York (General Electric, 2007a: 27). Crotonville's mission – to create, identify, and transfer organizational learning to enhance GE's growth and competitiveness worldwide – has strayed little from its founding roots. This started in 1956, when former Chairman Ralph Cordiner decentralized the company and established the Management Research and Development Institute, the first corporate university in the U.S., to help managers adapt to the new business structure, analyze trends, and grow the company (GE Global Learning, 2009: 14, 16, 29).

As at General Electric, Toyota also allocates significant resources to develop employees into lifelong practitioners of the Toyota Production System (TPS) capable of imparting their operational expertise onto coworkers as mentors and teachers. TPS and production skills training, once the domain of the manufacturing plants, is now centralized at four dedicated regional centers: the first Global Production Center at Toyota's second oldest plant in Motomachi, Toyota City, Japan, the North American Production Support Center in Georgetown, Kentucky, U.S.A., the European Global Production Center in Derbyshire, U.K., and the Asia Pacific Global Production Center in Bangkok, Thailand.

To hone people management and social skills that are difficult to convey given their contextual specificity and variation from one market to the next, Toyota established three dedicated training centers: the University of Toyota, where employees and dealers in the U.S. can experience continuous training, the Global Knowledge Center, a central repository of best practices in sales and marketing sourced from distributors around the globe are disseminated, and the Toyota Institute, where global leaders and managers are developed by sharing the Toyota specific philosophies and values such as kaizen, *genchi genbutsu* (to see things firsthand), respect for people, everybody should win, and customer first, dealers second, and manufacturer last (described in Chapter 6).

The next two sections take a closer look at the global programs and facilities at each company that are designed to meet the training and development needs of employees as they advance up the ranks of the organization.

Global Learning at General Electric

The focus of training at General Electric is on employee development, with the understanding that by helping employees around the world grow and be more competitive will in turn allow the company to continue growing and be more competitive (GE Global Learning, 2009: 8). The architecture of training at General Electric is based on a global learning umbrella, known as GE Global Learning, encompassing three training buckets covering business knowledge, functional skills, and leadership. This structure is designed to connect learning opportunity and need based on employee evaluations, which supports rationalization and simplification of coursework redundancies (Ibid.: 7). The goal, according to Ricky Taguchi (personal communication, 2009, April 27), Manager of Crotonville Leadership Japan, is to "personalize training and make it an investment corresponding to the individual 'me' needs of each employee."

Business Knowledge

The first Global GE Learning training bucket is Business Knowledge, encompassing training in specific process, product, and service know-how as well as business acumen for each business unit in the company's four divisions: Technology Infrastructure, Energy Infrastructure, GE Capital Finance, and NBC Universal (General Electric, 2008a: 9). Since this type of knowledge varies by business and division, it is delivered to all employees in the same business unit. Consequently, many General Electric divisions have their own corporate universities focusing on business-unit specific fundamentals – the foundation that enables employees to solve the most challenging issues facing clients and deliver expectation-exceeding value (Ricky Taguchi, personal communication, 2009, April 27).

Functional Skills

The second training bucket, Functional Skills, provides best-in-class, in-depth programs for professionals in engineering, finance, human resources, information systems, marketing, and sales (GE Global Learning, 2009: 8). Unlike the business- and division-specific Business Knowledge training, all General Electric employees receive Functional Skills training corresponding to their operational responsibilities, be it in product development, manufacturing, or human resource planning. The purpose is to infuse employees with the same high level of functional skills, plug proficiency shortcomings, and develop expertise in every discipline needed to fuel the imagination needed to promote growth.

There are five types of functional skills training: the sales and marketing focused Commercial Leadership Program (CLP), the Experienced Commercial Leadership Program (ECLP) for individuals with proven sales experience, the accounting-oriented Financial Management Program (FMP), the operations-focused Information Management Leadership Program (IMLP), and the Human Resource Leadership Program (HRLP). All programs are run by corporate staff at General Electric's headquarters, each with dedicated staff responsible for functional skills development. For example, the Chief Marketing Officer oversees a group of experienced sales and marketing employees that runs CLP and ECLP training, the Chief Financial Officer has a similar group running the FMP, and so on (Ricky Taguchi, personal communication, 2009, July 17).

A typical functional skills training programs consists of a series of job rotations combined with frequent performance and development evaluations. For example, ECLP participants undergo four six-month rotating assignments in the sales and marketing functions of a General Electric business, and receive quarterly self-assessment and supervisor

evaluations to reflect on accomplishments, gauge development need, and chart a career path towards a future leadership role in sales and marketing (General Electric, 2009d).

ECLP training also covers key marketing, sales, and leadership skills, such as the proprietary A+CEC strategy execution framework, a multi-phased tool designed to *Appraise*, *Calibrate*, *Explore*, and *Create* strategically viable and commercially defensible concepts by following a practical question-based approach to marketing (General Electric, 2007b: 10-11). Other tools embedded in the A+CEC framework include the CECOR multi-level planning model to *Calibrate*, *Explore*, *Create*, *Organize*, and *Realize* strategies for the commercialization of new product introductions, and the CAP or *Change Acceleration Process* approach to create and shape visions and to mobilize commitment for new technical and commercial innovations that fit the company's growth strategies (Ibid.: 12-14). These tools are detailed in Chapter 4.

Crotonville Leadership

The third and final training bucket is Crotonville Leadership, a comprehensive learning experience where leadership skills are imparted to the next generation of managers who will imagine and champion the future growth of the company. The Crotonville Leadership courses, most of them unique to General Electric, have four principle aims: 1) educate employees in key leadership and initiatives, 2) communicate and strengthen commitment to the company's values, 3) promote interaction and sharing of best practices across business, location, function, and position, and 4) fortify strategic customer and key constituency relationships (GE Global Learning, 2009: 14). Unlike the other two training buckets, which provide a fixed set of courses, Crotonville Leadership includes both a structured regimen of leadership courses and customized training sessions that meet development need based on the experience, rank, and managerial capability of employees.

The Crotonville Leadership curriculum has four levels. The first two, composed of fixed sets of instruction-based courses, are 1) eLearning Leadership, spanning case-studies in management and soft skills topics, and 2) Essential Leadership, covering basic skills in the areas of engaging people, leading change, leading projects, and improving communication. The other two levels include customized sessions on 3) Cornerstone Leadership, which emphasizes experienced global management and leadership development, and 4) Executive Leadership, where training relies on intensive, self-reflective, action learning-based individual and group development.

The eLearning Leadership level includes 41 Harvard mentored courses on general management topics such as competitive strategy and marketing as well as 46 courses covering a broad array of skills on project management, business development, and leadership (General Electric, 2007b: 24).

In Essential Leadership, skill-building focuses on 13 specific areas: Building Essential Leadership, Effective Coaching, Hiring The Right People, Facilitation Skills at GE, Work Out at GE, Change Acceleration Process, Innovative Problem Solving, Project Management, Project Leadership, Team Building at GE, Presentation Skills at GE, Influencing at GE, and Effective Communications (Ibid.: 24-25).

The Cornerstone Leadership level starts with a series of five-day programs: Foundations of GE leadership (FoL), the Leadership Development Course (LDC), and the New Manager Development Course (NMDC). More advanced optional programs include the five-day Advanced Manager Course (AMC), the Corporate Executive Acceleration Program (CEAP), and the signature two-week Global Leadership Course (GLC) – an intensive, action-learning session that groups 48 non-US based managers from varied business units, divisions, and functions into four teams to develop implementable action plans tackling timely business issues (GE Global Learning, 2009: 25). The most notable feature of the GLC (which is

described in Chapter 5) is its emphasis on facilitated group-, partner-, and self-reflection sessions to change the way of thinking and mindset of trainees and develop their leadership and teamwork potential (Ricky Taguchi, personal communication, 2009, April 27). Although it is possible to skip GLC training by going straight from the NMDC into the Executive Leadership training level, attending the GLC is considered a career development milestone that prepares managers for the rigors of executive leadership training. As the final course in Cornerstone Leadership, acceptance to the GLC is strictly based on exemplary performance evaluations, promotional potential, and an approved nomination by a superior. Consequently, GLC trainees represent the company's pool of candidates with executive leadership potential.

The Executive Leadership level has four components: the eight-times-a-year Management Development Course (MDC), the three-times-a-year Business Management Course (BMC), the once-a-year Executive Development Course (EDC), and the recurring Leadership, Innovation, and Growth (LIG) program.

The aim of the three-week long Management Development, Business Management, and Executive Development Courses is to get managers to explore and discover who they are as individuals and how they interact with others (Yagi Yosuke, personal communication, 2009, March 25). This process of self-discovery progressively expands throughout the courses, from how to build a team and run an organization to leveraging the factors affecting multiple businesses or industries (Ricky Taguchi, personal communication, 2009, April 27).

The most recent addition to the Executive Leadership curriculum is the Leadership, Innovation, and Growth program, a series of 4-day sessions that bring together about 80 executives, each one hand-picked by the company CEO, to engage in collaborative explorations of market-based, customer-focused strategies (GE Global Learning, 2009: 31). The executives, who represent intact business leadership teams from up to six of the company's forty largest business units and divisions, discuss topics including growth and

business strategy, innovation, leadership, segmentation, sales management, and communication. The program culminates with "Report Out" sessions where the CEO personally reviews each team's action plan and commitment (GE Global Learning, 2009: 32-33). According to Susan Peters, Vice President of Executive Development and Chief Learning Officer at General Electric, the budget for developing the LIG program was $3 million, and during 2007, when the program was initiated by CEO Immelt, around 550 executives from 40 divisions took part in LIG sessions. In 2008, attendance grew almost six-fold to 3,000 people (Yamakawa, Ito, & Yamazaki, 2008: 27).

Delivery of Cornerstone Leadership is regionally shared by the GE Global Learning Network of facilities in New York (for trainees from North, Central, and South America), Munich (trainees from Europe), Abu Dhabi (trainees from the Middle East, Africa and near Asia region), Shanghai (trainees from China), and Tokyo (trainees from Japan and Asia-pacific). Executive Leadership training is the exclusive domain of Crotonville in the U.S. Tuition for a three-week executive development course, which is borne by the corporate human resources division of General Electric, is almost $21,000 per participant including board and lodging expenses (Ricky Taguchi, personal communication, 2009, April 27), a competitive price tag relative to executive programs at top tier business schools, such as the six-week all-expenses-paid programs at Harvard Business School and Stanford University at $60,000 and $54,000 per participant, respectively (Harvard Business School, 2009; Stanford Graduate School of Business, 2009).

The tuition level relative to other professional executive educations is an important benchmark because the human resource divisions of General Electric's regional business units are free to choose executive training providers apart from Crotonville. To justify its high price and attract trainees from General Electric's diverse business units, GE Global Learning strives to deliver leadership training that rivals the best executive education

programs available in the market, and efforts to raise the training quality include creating a self-contained environment where employees and customers interact in a campus-like setting, enhance their credentials by taking Crotonville certified courses, hear external speakers, and socialize at on-site residence buildings (GE Global Learning, 2009: 26).

Other efforts to enhance the Crotonville experience include branding every touch point throughout the training session. This begins with a personalized invitation signed by the CEO, on-line registration to the program, membership to an attendee "Facebook," and an international travel kit. New arrivals to Crotonville are greeted with a welcome pack that includes their leadership course curriculum, branded GE Global Learning room key, pads, and pens, and dedicated in-room closed circuit TV programming welcoming them to the program. Upon completing the program, graduates receive a "GE Global Learning" diploma and granted access to the GE Global Learning on-line discussion forums and survey tools (Ibid.: 27).

According to former trainees, the defining attributes of the Crotonville experience are the high quality of the courses, the opportunities to hear, network, and socialize with company leaders and coworkers in informal settings, and the opportunities to interact and learn alongside attendees from different businesses and countries (Peilung Yang, personal communication, 2009, March 15; Tatsuhito Sugaoi, personal communication, 2009, May 28; GE Global Learning, 2009: 25). These attributes characterize the sustained appeal of the Crotonville program, which attracts every year over 2,500 and 7,000 attendants to its Executive and Cornerstone Leadership course, respectively (GE Global Learning, 2009: 24).

Toyota's Global and Local Training Facilities

In the automotive industry, training people on hard skill topics – like auto transmission and suspension maintenance, electrical systems and body work repair – is easy to do in a classroom and workshop setting. Teaching soft skills – like effective decision

making, mentoring, problem solving, optimizing team performance, or the ability to be creative and innovate – is more difficult and requires a setting that cultivates social interaction and understanding, as well as introspection and self-discovery among students and instructors alike. To impart such learning to employees, dealers, and distributors around the world and to support local training in the United States, Europe, and Asia, Toyota made significant investments in education by establishing four dedicated facilities: the Toyota Institute, the Global Knowledge Center, the Global Production Center, and the University of Toyota.

Toyota Institute

The first of Toyota's key training facilities is the Toyota Institute, established in January 2002 at Toyota's headquarters in Toyota City, Japan. With a staff of 47 full-time employees in charge of global education, talent development, and human resource planning, it runs three levels of training programs – staff, management, and leadership – to develop global leaders and trainers capable of imparting Toyota Way basics in problem solving, on-the-job training, and policy deployment to other associates (Hiroshi Watanabe, personal communication, 2009, August 7; Toyota Institute, 2008: 1).[38]

In the staff training program, Toyota associates develop leadership, coaching, and team-based problem-solving capability based on the Toyota Way and Toyota Business Practices (TBP) in three courses that pair classroom training with a five- to six-month workplace problem-solving project that increases in scope and complexity relative to the job grade and experience level of the associate. The first course, with an annual enrollment of about 850 trainees, is the New Member Development Course (NMDC) for new hires that includes offsite manufacturing and dealership training. Next, with 300 trainees every year, is the Specialist Development Course (SDC) for employees with four years working experience.

[38] Toyota refers to its employees as "associates."

The final course, given to 600 trainees every year, is the Senior Specialist Development Course (SSDC) for associates with eight years working experience (Toyota Institute, 2009c: 8).

In the management training programs, newly promoted group and department managers are brought up to speed to their new roles and responsibilities by attending either the New Group Manager Development Course (NGMDC) or the New Department General Manager Development Course (NDGMDC), which have annual enrollments of 500 and 150 trainees, respectively (Toyota Institute, 2008: 9). These courses combine classroom training on human resources development, communication skills, and workplace management with a year-long on-the-job development projects that solve management issues and foster project ownership of workplace improvement initiatives, and culminate with the managers presenting practice improvement reports to their respective general managers (Ibid.)

Management training also covers the grooming of experienced external hires and overseas employees in 'Global Content' Toyota skills, or business and human resource management based on the Toyota Way. There are two global content types: 1) 'shop floor' including production-side job instruction, communication, standardized work, and kaizen skills, and 2) 'office staff' skills covering On-the-job Development, Toyota Business Practices, and *Hoshin Kanri* (business policy development and deployment). This training is coordinated with the Intra Company Transferee program (ICT), which allows transferees from overseas affiliates to undergo extensive on-the-job training in Japan for one-and-a-half to two years before returning to their home countries to develop human resources locally. To support the transferee program, the Toyota Institute also provides week-long courses to certify trainers in specific global content skills (e.g. Toyota Way, Toyota Business Practice, Hoshin Kanri, Communication Skills, Standardized Work and Kaizen) who then act as local instructors in their home countries. Participation in the transferee program has grown since

2000, when it was expanded globally, and 518 Toyota associates have taken part in the ICT as of April 2008. During the same period, a total of 350 participants representing 75 overseas affiliates have completed the one-week TBP course (Toyota Motor Corporation, 2008d: 65).

In the leadership development programs, Toyota associates who will eventually become global leaders are groomed leadership and business management skills based on the Toyota Way, and become part of a network of other Toyota global leaders. There are three programs – the Executive Development Program (EDP), the Leadership Development Program (LDP), and the Junior Executive Development Program (JEDP).

The nine-month Executive Development Program, with an enrollment of 40 of Toyota's most senior managers from its headquarters and overseas centers, sees trainees hone their understanding of the Toyota Way, exchange best practice experiences, and develop leadership and strategic-thinking skills during a week-long session at the Mikkabi Learning Center, Toyota's global educational facility located near the scenic lakeside town of Mikkabi, a one-hour drive from Toyota City (Hiroshi Watanabe, personal communication, 2009, August 7). The capstone team project requires trainees to develop TBP-based plans addressing global business issues faced by Toyota and present them to Toyota senior management, including the president, over a two-day session, before receiving individual leadership assessments and revised action plans that are implemented on their return to their respective divisions (Toyota Institute, 2008: 3).

The eight-month Leadership Development Program, with an enrollment of 40 mid-level managers from Toyota's overseas centers, also sees trainees learn basics of the Toyota Way and acquire business management expertise, but the focus is on individual development. Trainees work independently to create and champion solutions for managerial issues expected to emerge at their local companies within five years due to Toyota's global operations and future strategy (Ibid.: 4). The emphasis is to get managers to think about the

big picture of the organization, from long-term strategy development and social responsibility to value creation through process improvements and human resource development, and then build the support required to see their projects through.

In the eight-month Junior Executive Development Program, 60 Toyota mid-level managers also learn the basics of the Toyota Way and acquire business management expertise before developing plans, through a collaboratively team-based approach, designed to enhance the competitiveness of Toyota's group or affiliated companies and presenting them to Toyota managing directors (Ibid.: 3). Due to budget constraints, in 2009 Toyota indefinitely discontinued the JEDP pending review of the entire executive development curriculum, opting instead to concentrate its limited resources into the other leadership development programs (Hiroshi Watanabe, personal communication, 2009, August 7).

Global Knowledge Center

The second key training facility is the Global Knowledge Center, established in July 2002 in the same building as the University of Toyota. Its purpose is to unify the knowledge, expertise, and best practices of Toyota distributors around the world. The Global Knowledge Center and its sister facility, the European Knowledge Center, educate distributors in the Toyota Way using several hands-on programs that encourage knowledge exchange. These include:

- The *Toyota Way in Sales and Marketing Discovery Program*, an 8-day course emphasizing genchi genbutsu in Japan where participation is by nomination only.
- The *Train the Trainer* (T3) program, a 5-day workshop to prepare distributor and dealer employees to become trainers in the Toyota Way in Sales and Marketing values in their home markets.
- The *Toyota Way in Sales and Marketing* program, a 2-day workshop held at a distributor to promote Toyota Way in Sales and Marketing values to employees.

- The *Dealer Performance Simulation*, a 3-day program that allows participants to experience Toyota distributor/dealer relationships through customized computer-based simulations.
- The *After-Sales Performance Simulation*, a 3-day learning program based on computer-based simulations of the after-sales operation of a Toyota dealership.
- The *Supply & Demand* program, a 2-day workshop to develop sales and distribution acumen based on Toyota's lean distribution approach.
- The *Toyota Value* program, a 1-day workshop on the practical application of Toyota brand values.
- The *Lexus Experience* program, a 7-day workshop that exposes participants to the fundamental statements and concepts represented by the Lexus brand and value.
- The *Kaizen Experience and Exchange Network* (KEEN) program, a series of workshops in best practices in sales and marketing among Toyota distributors with advice on how to localize such practices (Global Knowledge Center, 2008c: 9-11, 19).

The Global Knowledge Center also dispatches trainers to educate employees at Toyota distributors worldwide to help infuse the Toyota Way into daily operations (John Kramer, personal communication, 2007, May 9).

To supplement its programs, in 2002 the Global Knowledge Center began publishing *Best Practice Bulletins*, consisting of case studies describing innovative approaches at various Toyota distributors around the world. Topics range from customer service and dealer network management to human resource management and marketing. The bulletins include examples such as changing the layout of the service area to increase visual access for the customer of the repair work being done, and how to create a warm and friendly showroom atmosphere

that enhances the purchaser's experience. As of 2008, 48 *Best Practice Bulletins* have been published, each volume available for download in multiple languages from the Global Knowledge Center's web site (Global Knowledge Center, 2008a: 14).

The Global Knowledge Center also produces *Team TOYOTA*, a bi-monthly magazine promoting global understanding of the Toyota Way in Sales and Marketing, and *GKC Connect*, a bi-monthly newsletter featuring updates on all conferences, workshops, and web sites operated by the center (Global Knowledge Center, 2008c: 14). And in 2003, the Global Knowledge Center established the Knowledge Bank, a web site where distributors can download Global Knowledge Center training materials and best-practice bulletins, product information, and online teaching aids such as the University of Toyota's training and development courses. The Knowledge Bank also hosts interactive forums where distributors can link up with Toyota experts worldwide and get advice on implementing global best practices (Osono, 2005: 13).

As of 2006, more than 20,000 people had experienced Global Knowledge Center training in the Toyota Way in Sales and Marketing Discovery or T3 programs, or under the tutelage of a T3 trainer, and in 2007 the center started recovering over 50 percent of its expenses through fees charged to trainees (Toyota Motor Corporation, Global Marketing Division, personal communication, 2007, July 20). For example, for Toyota Way in Sales and Marketing Discovery Program, the fee is $1,600 per participant, excluding expenses. For the T3 program, the fee varies from $1,053 to $1,906 per participant depending on the number of participants and the region where training takes place (Global Knowledge Center, 2008b: 1). With 24 staff based mainly in the United States, the Global Knowledge Center aims to become a self-financed training center by 2012, with a product mix that is 50 percent on-site program offerings and 50 percent consulting in Toyota Way in Sales and Marketing best-practices. According to John Kramer, Vice President of Toyota Motor Sales, U.S.A., and

head of the Global Knowledge Center, the biggest hurdle going forward is designing new training programs that cope effectively with Toyota's evolving global challenges (personal communication, 2007, May 9).

Global Production Centers

The third key training facility is the Toyota's Global Production Center in Japan, with sister facilities in Europe, Asia, and North America. This is where production staff is taught hard and soft skills including TPS and kaizen in line-side and simulated work environments. These facilities are expensive – the North American Production Support Center, a refurbished training facility in Kentucky, was established in 2006 at a cost of $12 million with 29 employees including 14 full-time trainers with over 15 years of field experience (Toyota Motor Corporation, 2007c; 2008c: 65). That same year, the Pan-European center was established in England for $18.5 million with 20 full-time employees and 11 training facilities (Toyota Motor Corporation, 2007d: 22). Together with the Japan and Thailand centers, with 150 and 8 full-time trainers respectively, almost 4,000 Toyota associates undergo TPS training every year (Toyota Motor Corporation, 2008d: 65).

According to former Toyota CEO Watanabe, these facilities serve as centers of knowledge exchange where instructors and trainees exchange know-how through rigorous activities that promote face-to-face interaction, a process he described as a "spiral up" as trainees learn and improve. "We will use Japan as the base, but will extend this process to other parts of the world," said Watanabe (personal communication, 2007, October 10). "In America, spiral up at America's level, in Europe, at Europe's level, in Asia, at Asia's level, in China, at China's level." He emphasized that employees have to recognize their own limits, invest the time needed to reach their own new level, and continue the climb up process in order for Toyota to progress.

University of Toyota

The fourth key training facility is the University of Toyota, established in April 1998 in Torrance, California, as a central repository of Toyota educational programs for employees and dealers in the Toyota, Lexus, and Scion divisions in the United States. As a corporate university, the University of Toyota is designed to achieve four principal goals: to inculcate Toyota culture and corporate values in the workforce, to develop leadership and managerial talent, to standardize know-how and organizational processes, and to promote communication among employees with few opportunities to interact with each other outside this environment.

Other automakers have similar institutions. GM University at General Motors' global headquarters in Detroit provides classroom instruction to GM employees and dealers supplemented by Web-based interactive distance learning in a comprehensive program involving more than 3,200 courses (General Motors Corporation, 2008). By comparison, the University of Toyota has a more limited curriculum of about 200 courses on topics like product knowledge, sales process, financial services, and managerial development (Osono, 2005: 7). Courses are taught by 83 full-time instructors experienced in the field, supported by 65 staff and business partners (Toyota Motor Corporation, Global Marketing Division, personal communication, 2007, July 20). Instruction is focused on developing Toyota-specific soft skills and courses are structured to allow employees to apply their learning in daily routines. The skills include the practice of incremental improvement or kaizen to solve problems using Plan-Do-Check-Act cycles; the practice of root-cause analysis by asking the question "why" five times; and the practice of visualization using A3 paper. Giving employees opportunities to practice what they are taught and get immediate feedback emphasizes on-the-job and hands-on training – the method of choice to develop employees at Toyota.

One example is the production simulation workshop at the University of Toyota in which employees assembled plastic toy cars to learn the principles of just-in-time manufacturing. In the first phase of the exercise, employees worked together in a line, each performing a specific task, like mounting the wheels. The aim was to produce a specified number of cars within a certain period of time – the classic 'push' system perfected by Ford to produce the Model T. But as the assembly work proceeded and time ran out, employees found that they still had work-in-process in the form of unused parts piling up all along the line, resulting in excess inventory, including mismatched colors with respect to order requests, and a number of defects in the finished cars.

In the second phase, employees were organized into 'island' groupings with each island specializing in the assembly of several parts and expected to maintain the quality of their output. Each car was assembled based on demand and anyone could stop production if there was a quality problem, demonstrating the 'pull' system of production instituted by Toyota. Progress was slow at first, but over time, employees adjusted and learned from each other, eventually surpassing their production speed under the 'push' system while reducing the amount of work-in-process, excess inventory, and the number of defects in each car, thereby, minimizing lost sales opportunities.

This kind of structured, hands-on training program requires a large pool of dedicated and experienced frontline managers who can also instruct effectively in intangible concepts like the company's mission, vision, and values. These managers must be able to coach with a firm, but hands-off approach. They must also be good listeners and able to provide encouragement and guidance regardless of the setting or cultural differences among employees.

In 2003, the University of Toyota was recognized as a model corporate university by the International Society for Performance Improvement (2003) and the International Quality

& Productivity Center (2003). In 2006, over 1,837,000 Toyota and dealer employees took just-in-time electronic courses at the University of Toyota, while another 80,000 completed the production simulation workshop (Toyota Motor Corporation, Global Marketing Division, personal communication, 2007, July 20).

3.2 Long-term Employee Development up the Organization

The process of developing employees in an organization consists of four linked steps: 1) *attracting* the right people, 2) *developing* them, 3) *managing* them, and 4) *retaining* them (GE Global Learning, 2009: 4). Most companies can capably handle the attracting and retaining steps, where the respective objectives of hiring outstanding talent and retaining stellar performers are easily articulated, structured, and executed. However, many companies do not fare so well with the developing and third managing steps because they fail to provide the fresh opportunities that allow employees to continue growing as experience and capability deepen (Ricky Taguchi, personal communication, 2009, April 27). Nurturing employees requires a persistent and flexible approach to human resource development, where training is carefully planned and delivered based on the evolving developmental needs of employees over time.

There are two basic trajectories for the delivery of training in an organization: vertically for the dispersal of transferable skills useful across business units, functions, and division, and horizontally to deliver focused training corresponding to the assessed development needs of employees based on their experience, capability, and responsibility (Figure 3-1).

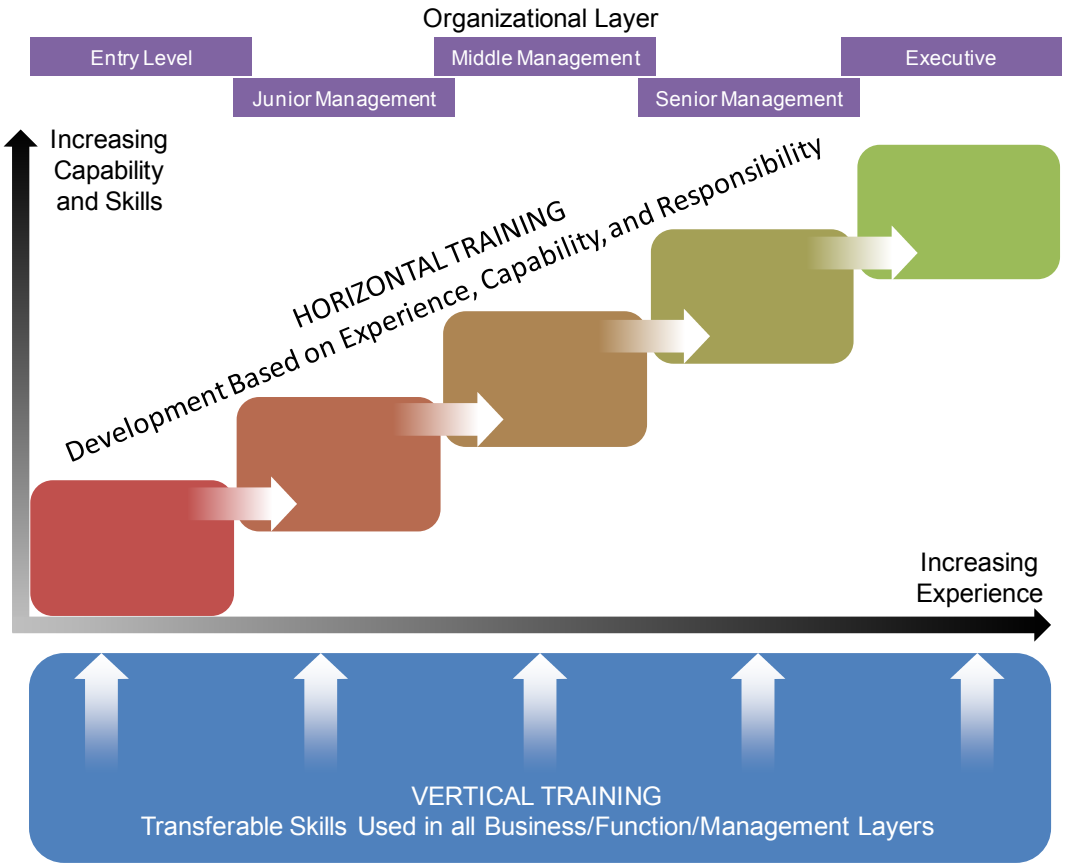


Figure 3-1. The Two Training Trajectories in an Organization.

Note. Transferable skills (upwards-pointing arrows) useful throughout the organization is delivered vertically to all employees, irrespective of experience or skill level. Training to develop specific skills and capability (right-pointing arrows) is horizontally prescribed to employees based on their experience (horizontal axis), capability and skill (vertical axis), and responsibility/rank in the organization (rectangles across the top of the graph). Created by author.

Aligning both trajectories requires a committed and patient approach to workforce development in an environment that frequently assesses the evolving development needs of each employee.

The next sections look at the long-term and committed approach to human resource development at General Electric and Toyota, each company operating a comprehensive

arsenal of horizontal and vertical training programs that rigorously address skill and development need in every organizational layer – from entry level to senior executive.

Tiered Leadership Development at General Electric

General Electric considers itself a "learning" company, with a training regimen that changes according to the needs of individual and team learning at every level in the organization (General Electric, 2008a: 8). To nurture leadership potential, all employees also go through a comprehensive experience-building program that provides ample opportunities for them to excel, develop, and grow. The basic attributes of this program include challenging job assignments, opportunities to exceed (stretch) goals, high visibility of progress and accountability, candid and frequent assessment and feedback, and developmental training corresponding to need (GE Global Learning, 2009: 5).

Leadership development is tiered, with entry-level programs based on rotating assignments and mentorships typically over a two-year period. Experienced managers learn to bridge innovation and operations through team-based, action-learning business projects that connect the company's strategic vision with the firm's culture, resources, and capability. This requires a long-term outlook that spans many years. On average, executives invest a minimum of 12 months in training and development over a 15-year period (General Electric, 2009b) with career paths defined by prolonged and varied appointments. For example, during his 19 years at General Electric prior to becoming CEO in 2001, Jeffrey Immelt held positions in the plastics, appliance, and medical businesses, was appointed as a corporate officer in 1989, and in 1997 joined the GE Capital division board. The emphasis on continuous development is evident in Immelt's calendar, where 40 percent of his time is spent on people, most of it teaching employees. "Good leaders don't tell people what to do," said Immelt. "They give teams capability and inspiration" (2004: 3).

Leadership training at General Electric varies with employee rank. There are five organizational layers in the company: the entry-level Professional Band (PB), followed by the Lead Professional Band (LPB), the Senior Professional Band (SPB), the Executive Band (EB), and finally the Senior Executive/Vice President Band (SEB/VP). While most employees are at the PB and LPB layers, only one out of every 10 are in the SPB layer, and one in 40 are EB. Worldwide, there are fewer than 200 employees in the SEB/VP band (about one out of every 1,500); these are the corporate offices of General Electric (Ricky Taguchi, personal communication, 2009, April 27).[39]

Promotion up the bands requires successful completion of a prescribed set of courses in the leadership-training curriculum. For example, to move from the PB to the LPB layer, employees must master the first tier of management and communication skills taught in the Elearning and Essential Leadership curriculums and complete the Foundations of GE Leadership (FoL), the first course of the Cornerstone Leadership curriculum. Further mobility up into the SPB layer requires completing second tier of Leadership Development (LDC) and New Manager Development (NMDC) courses. For mid-career hires with management experience, entry to the SPB layer is contingent on the successful completion of the Corporate Executive Acceleration Program (CEAP).

Promotion beyond the SPB layer is meritocratic and depends on two factors: 1) proven leadership and growth potential as assessed through performance evaluations, and 2) nomination and selection to the next tier of training courses needed to advance based on work experience. So, for employees to enter the EB layer, they must first, in successive order, be nominated by a superior, accepted into, and satisfactorily complete the Advanced Manager (AMC), Global Leader (GLC), and Manager Development (MDC) courses. The progression of the training tiers with respect to the bands is shown in Figure 3-2.

[39] In Japan, where General Electric has almost 5,000 employees, only 400 are SPBs, less than 100 are EBs, 10 are SEBs, and only 2 are VPs (Ricky Taguchi, personal communication, 2009, April 27).

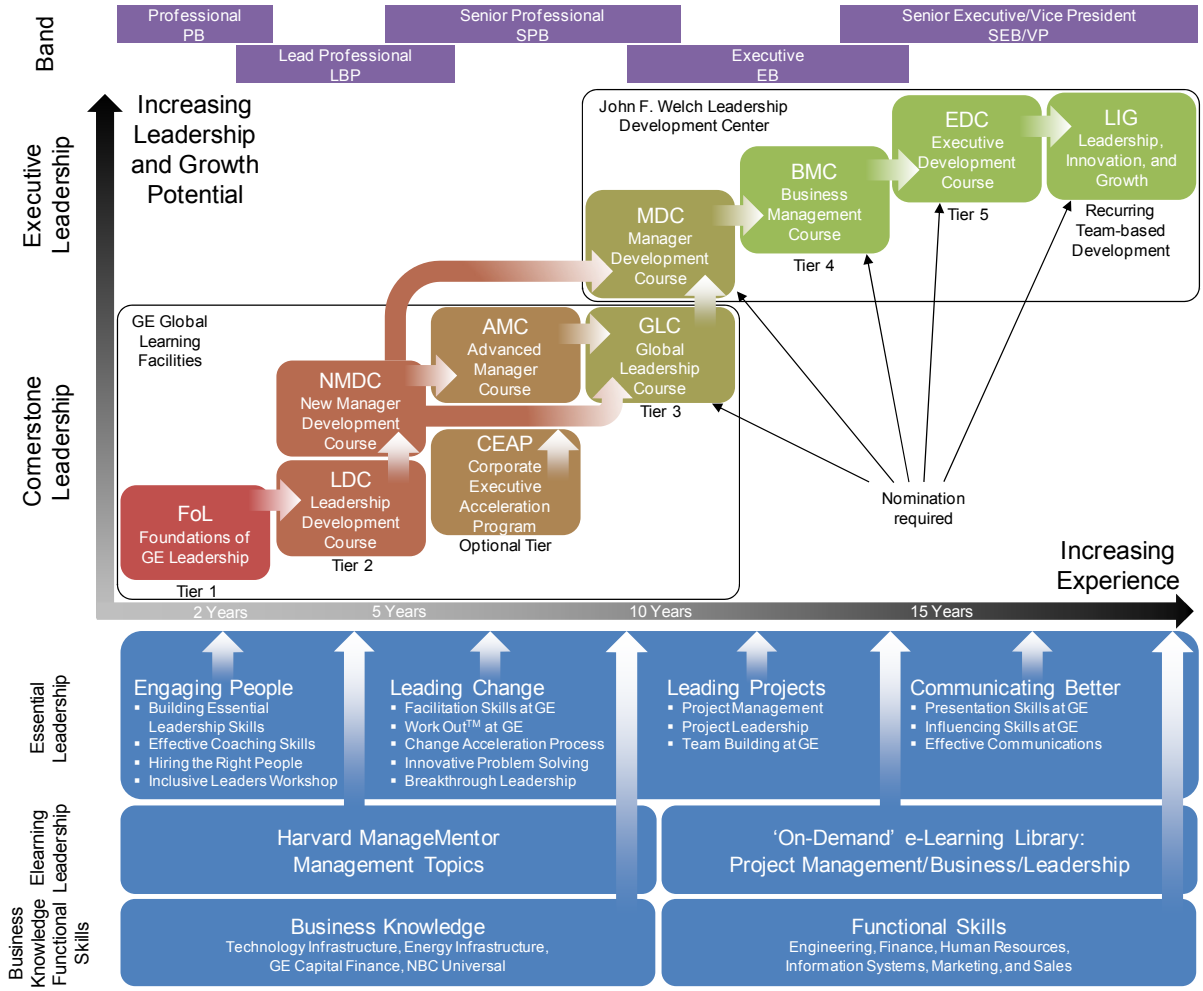


Figure 3-2. Business Knowledge, Functional Skills, and Leadership Training at General Electric.

Note. Training of transferable skills (blue rectangles at the bottom of the figure) vertically spans all organizational bands (horizontal rectangles across the top) and is the domain of business-specific corporate universities (for business knowledge and functional skills) and Crotonville (for the Elearning and Essential Leadership curriculum). More advanced management and leadership training is horizontally prescribed in tiers corresponding to a trainee's band experience (horizontal axis). From tier 3 onwards training is meritocratic, depending almost exclusively on leadership and growth potential as assessed through performance evaluations (vertical axis) and approved nominations to the executive leadership courses. Adapted from Global Learning (2009: 2) and interview notes.

This process takes time. About 10 years of positive performance evaluations are typically required to reach the upper echelons of the SPB layers before being nominated to the GLC or MDC courses, and it is not uncommon for capable candidates to be rejected multiple times before finally being accepted (Ricky Taguchi, personal communication, 2009, April 27). Nonetheless, the tiered training ensures the consistent development of future General Electric executives in a pipeline approach that identifies, sifts out, and nurtures the best and brightest talent from the company's global roster of experienced employees.

Toyota's On-the-job Training and Development

To build a multi-skilled workforce, Toyota institutionalized a number of training programs, both on and off the job, that teach problem-solving skills. These programs are organized along two tracks – 'production skills' for shop staff and 'management development' for office staff (Figure 3-3).

The production skills track consists of four types of shop staff training – qualification-based, improvement-based, supervisor-oriented, and manager-level – and is the domain of Toyota's Global Production Centers. Shop staff promotion is closely linked to training completion, and instruction is widely dispersed throughout the organization through an on-the-job line-side training (OJT) and development (OJD) approach, with certified production managers and supervisors coaching and mentoring subordinates in their respective areas of responsibility and expertise (Hiroshi Watanabe, personal communication, 2009, August 7; Liker & Hoseus, 2007: 145).

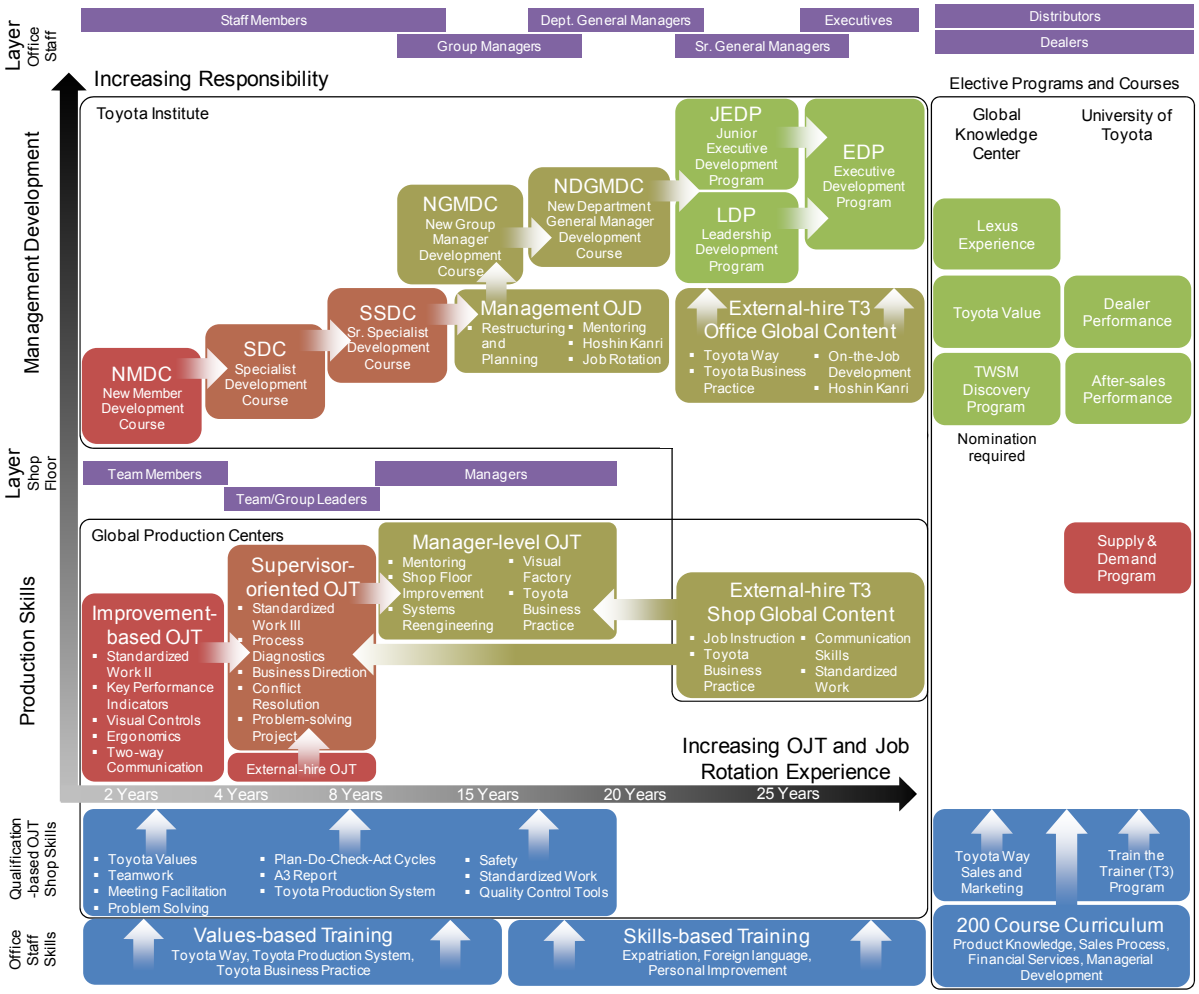


Figure 3-3. Production Skills and Management Development Training Tracks at Toyota.

Note. Training in fundamental skills (bottom blue blocks) that vertically span all organizational layers (shop floor and office staff) is the domain of the Global Production Centers (for shop floor related skills) and the Toyota Institute (Toyota Way values and personal skills). Production skills and management development training is horizontally prescribed along two tracks by the Global Production Center and the Toyota Institute, respectively, based on a trainee's planned career development path, OJT/job rotation experience (horizontal axis), and increasing level of responsibility (vertical axis). A unique feature of training at Toyota are the elective courses and programs (column on the right) for distributors and dealers that is based on the Toyota Way in Sales and Marketing. Created by author.

Training program content, length, and approach can vary, depending on job grade, responsibility, and function. For example, in the production skills track, the training is always OJT, but the tasks depend on production experience and rank of the trainee. In the qualification-based training for shop staff, coursework combines classroom-based instruction with line-side practice on both hard skills, such as the Toyota Production System, standard work routines, quality control, and safety, to soft skills based on the Toyota Values, including teamwork, meeting facilitation, and problem solving using Plan-Do-Check-Act (PDCA) and A3 Report routines (both described in Chapter 4). The purpose of the OJT-focused qualification-based curriculum is to ensure that trainees capably apply and cultivate Toyota Way standards in everyday operations; a practice expected of all employees regardless of their job function or position in the organization. Team members typically take two years to complete their shop floor qualification training (Liker & Hoseus, 2007: 131), before spending another five years learning the fundamentals of solving problems on the job, first through improvement-based OJT, then supervisor-oriented OJT, and finally manager-level OJT.

Improvement-based OJT concentrates on operational processes and standardized work routines and tools, such as key performance indicators, visual control boards, ergonomic improvements, and two-way communication (Ibid.). Trainees also learn how to teach others by repeatedly performing standard production work, encountering variations from standard, identifying root causes, solving problems, setting a new standard, training others in the new standard, and performing according to the new standard (Ibid.: 138-139). One aspect of this OJT approach is the principle that employees have the freedom to make decisions based on their own judgment. Rather than follow a strict set of rules, employees learn to make decisions based on a rough set of guidelines that direct the organization.

In the supervisor-oriented and manager-level OJT, newly appointed group leaders (a group is the smallest organizational unit at Toyota) go through a three-month e-learning

program and extensive line-side process diagnostics work involving cross-functional group training sessions. To foster leadership and teamwork, these programs include individual and team-based problem solving projects that provide mutual stimulation, inspiration, and improve conflict resolution skills. For external hires with production experience, training also includes intensive TPS and Toyota Way catch-up sessions in all the fundamental skills emphasized in the qualification-, improvement-, and supervisor-based OJT.

Senior Managing Director in charge of Human Resource Management Akio Matsubara described the philosophy behind this on-the-job approach at a conference on Japanese Socio-Economic Development in 2004:

> When an employee solves a problem, she or he makes a contribution to corporate policy, which ultimately is connected to user satisfaction. We inculcate our employees with the idea that learning to solve problems well is the absolute minimum requirement for success at Toyota. There is simply no way this can be learned in just a few days of training, which is why it is critical that we retain the OJT [on-the-job training] system.

In the management development track for office staff, training emphasizes Toyota Way fundamentals such as the Toyota Production System and Toyota Business Practices as well as skills-based training, including preparation for expatriation, foreign language acquisition, and personal improvement. As with the shop floor track, the management development track also follows an on-the-job approach for all office staff training and is supervised by the Toyota Institute in coordination with the company's central and regional human resource departments. For example, one year before employees become section chief or *kakaricho* (the highest job grade in the staff member layer) they attend the Senior Specialist Development Course where they receive a four-day training session and are then

given six months to jointly develop with their mentors a five-year business direction plan that is presented to a group of relevant division managers.

This hands-on approach continues in the manager or *kacho* training programs, which emphasize soft skills such as mentoring, as well as prioritizing commitments and resource allocation, restructuring operations, business planning, policy deployment, and systems reengineering, a task that often takes a back seat to daily operations. From the first day of kacho training, every trainee is asked to identify issues and immediately formulate changes. They are also encouraged to always consider the broader perspective and responsibility by thinking as though they were managing at two levels higher in the organization. "I learned how to think thoroughly in my training," said former Toyota Senior Managing Director Zenji Yasuda (personal communication, 2007, August 29). His first assignment in Toyota was to procure springs, and he was asked to predict what the market for springs would be like three years, five years, and 10 years after the liberalization of capital markets and trade. He made the mistake of asking his superiors what he should do and was scolded with the remark: "What do you want to do?" He recalled the episode as follows:

> When I had not thought things through thoroughly enough I was told that I needed to suffer more… Even when my proposals were accepted they were only given lukewarm consent. Despite this response, I was only rejected twice in my entire career, both times on small projects that involved ethical issues.

Future Toyota executives are gradually developed through successive job rotations and apprenticeships blending production and business process duties that span decades. For example, Akio Toyoda's 25-year apprenticeship prior becoming company president in 2009 included positions as Vice President of the now-closed New United Motor Manufacturing Inc. joint venture between Toyota and General Motors Corp in the U.S., Director of Toyota's

Guangqi Engine plant in China, Executive Vice President responsible for IT, sales, and customer service, and Board Chairman of Toyota Motor Europe (Toyota Motor Corporation, 2009d: 10-11).

Executive advancement is coordinated annually through a strict selection process known as K3 Succession.[40] Future management candidates are pooled by regional succession committees that share information on human resources with the Toyota Institute, which then coordinates the nomination and selection of candidates to the LDP training courses (Hiroshi Watanabe, personal communication, 2009, August 7). Further advancement into senior management is handled by a global succession committee based at Toyota's headquarters in conjunction with the Toyota Institute's Global 21 Program (G21), a human resource management system introduced in 1999 to harmonize the development, evaluation, and remuneration of company executives who will handle the demanding responsibilities of Toyota's 440 global posts (180 of which are located outside of Japan, 90 of them being non-Japanese) by offering challenging assignments to experienced managers from both Japan and overseas (Toyota Institute, 2009b: 5). The assignments are planned by the regional and global human resource succession committees based on the career path of the employee, with executive development at the Toyota Institute and additional production-related training at the Global Production Centers (demarcated by the overlapping domains of both facilities with respect to the Shop Global Content program in Figure 3-3) (Hiroshi Watanabe, personal communication, 2009, August 7).

To internationalize the G21, in 2009 the Toyota Institute introduced a strict English language requirement for entry to the EDP course. As part of the "Be-bilingual" project, a

[40] There are four individual grade levels for Toyota executives: K3 (managers), K2 (assistant general managers), K1 (general managers), and K0 (above general manager), with those ranked K1 and K0 are known as Global Toyota Executives. Executives are also graded based on increasing job responsibility and complexity, starting with E4 (the lowest level, typical for managers), then E3 (assistant managers), and followed by E2, E1, and SE (for the global executives) (Toyota Institute, 2009b: 6).

company-wide initiative started in 2009 to promote English usage in all Toyota operations and written materials, the language requirement represents a high hurdle for executive advancement, especially among the many Japan-based managers who rarely use English on a daily basis (Ibid.).

One unique aspect of management development at Toyota is the availability of elective courses and programs exclusively for distributors and dealers under the auspices of the Global Knowledge Center and the University of Toyota (column along the right side of Figure 3-3). These courses offer instruction on the differences between the discrete kaizen at the factory level from the larger scope kaizen encountered at the retail level, where the optimality of solutions to problems is difficult to verify because of an always changing sales environment (Liker & Hoseus, 2007: 467). The programs also provide the tools for distributors and dealers to train sales and service staff to solve problems and improve internal processes using Toyota Way methods and best practices in sales and marketing sourced from a global network of Toyota distributors and dealers in over 170 markets.

According to Human Resources General Manager Teruo Suzuki, "[Toyota's] power base comes from allowing [people] to take their time to develop" (Mizoue, 2005: 71). The company has recognized that since the experience needed to improve decision-making accumulates slowly and the benefits of developing organizational capabilities only manifest over time, there are no short cuts to employee development – it requires the unwavering commitment of resources, a long-term commitment, and ample patience.

3.3 Rigorous Assessments to enhance Organizational Fitness

Effectively attracting, promoting, and retaining the right employees – those who fit with the company's core values and understand their responsibilities, are self motivated and passionate about their work, fulfill their commitments without being tightly managed, and refrain from taking sole credit when results good yet admit responsibility when they are not –

is the greatest human resource development challenge that companies face (Collins, 2009). Failure to identify and put the right employees into key positions of responsibility is fraught with risk, as poor planning, ill-advised decision making, and ineffective execution will place the company on a path of gradual decline and eventual irrelevance.

At General Electric and Toyota, the long-term development of employees up the organization depends on strict screenings and evaluations to single out those who both perform assigned tasks and fit with company's core values. This screening is paired with frequent, even daily, assessments that look beyond performance metrics to assess understanding and adherence to company values, highlight skill shortcomings, build promotional paths, and retain talent in the organization. The next two sections describe the hiring and promotion screens that support the talent management infrastructure at both companies.

General Electric's Growth-focused Hiring and Performance Evaluations

At General Electric, potential hires are judged against the growth traits (i.e. clear and decisive thinking, external focus, expertise, inclusiveness, and imagination) expected of company leaders through a series of formal and informal interviews with human management recruiters, likely coworkers, and potential supervisors.

This starts with a recruiting process typified by many interviews where candidates are evaluated for practical business creativity and acumen. More specifically, interviewers look for demonstrated potential to innovate, solve problems, create financially viable solutions to customer needs, and to develop, lead, and grow others (Tichy & Bennis, 2007: 167). Other criteria include an openness and receptiveness to change, initiative to follow-through and prioritize tasks, team-player and communication skills, and professional integrity to admit responsibility for past mistakes (GE Real Estate, 2004).

With so many factors to evaluate, the hiring process at General Electric can be demanding and time consuming, especially for mid-career hires. For example, despite his 23 years of experience in human resources, Ricky Taguchi was interviewed seven times during the three months prior to being hired as Manager of Crotonville Leadership Japan in 2007.

To thoroughly assess the performance, advancement, and leadership potential of employees and maintain a vibrant talent-building pipeline, General Electric has five evaluation and feedback tools: the Employee Measurement System, the Goals and Objectives review, the Session C process, the Operating Rhythm review, and the comprehensive 9-block objectives and values assessment.

The Employee Measurement System (EMS) is an on-line performance review that focuses on the delivery of quantifiable results in line with an employee's goals and objectives for the year. Reviews take place one-on-one with the supervising manager every month and, to minimize potential bias, are supplemented by reviews from supervisors who are two levels higher in the organization to provide a third-party perspective (Tatsuhito Sugaoi, personal communication, 2009, May 28). The function of the EMS is to track progress, assess development need, and take remedial action so employees can achieve their targets on schedule. Overtime, the EMS reviews also builds an up-to-date resume of accomplishments that is useful for internal job transfers (GE Capital Solutions, 2005a).

The Goals and Objectives (G&O) review is also an on-line evaluation based on annual performance targets as agreed between employees and their supervising manager at the beginning of year. A typical G&O consists of detailed milestones, typically for a new business process of product development project. For example, for the launch of a new GE credit card business in Japan, G&O targets comprised detailed product specifications (by mid-July 2009), market segmentations (two months later), marketing initiatives (by year's end), and the final business roll-out plan (in April 2010) (Tatsuhito Sugaoi, personal

communication, 2009, May 28). Mapping out and consenting to such a tight schedule is a time consuming process that can take several weeks, and the final G&O review is subject to bias and favoritism, with managers at times appraising fellow nationals favorably over equally competent peers in a bid to accelerate their promotion up the organization and engender reciprocal support in the future.

The Session C is an annual review process to indentify top global talent in the organization. At a Crotonville Customer Summit in August of 2008, Chief Learning Officer Susan Peters said "Every day is a Session C" to highlight the relevance of the review process to sustain high performing leadership in the company's operations. Only the top 20 percent performing employees go through a Session C, which provides feedback on individual performance, developmental needs to become top managers, and singles out promotion potential (Ricky Taguchi, personal communication, 2009, April 27). Evaluations are rigorous, starting every January at the local and country level, then moving to the regional and global level by April. In addition, quarterly reviews throughout the year distinguish top performers and prioritize their development through additional training, new assignments, and challenging stretch goals. All Session Cs are conducted by the respective leaders of each business or division, with the exception of reviews for the approximately 650 employees at the SEB layer and above, who are personally interviewed by the CEO to keep tabs on the succession planning of key management positions (Yagi Yosuke, personal communication, 2009, March 25). Consequently, acceptance to executive training such as the MDC, GLC, and LIG, is contingent on the outcome of the nominated employee's Session C.

The Operating Rhythm is a monthly review of a manager's growth playbook (i.e. the goals and objectives for a project team, business, or division) alongside their direct supervisor, typically the business or division CEO, who asks about progress against the current operating plan, the previous year, the previous quarter, and the project goals. These frequent progress

reviews are intended to reveal performance gaps early on so managers can take corrective measures and fix potential flaws, either through additional coaching or by altering or bolstering the composition of their project teams (Ibid.).

The final evaluation tool at General Electric is the all-inclusive 9-block, which merges the EMS, G&O, Operating Rhythm, and Session C into one master evaluation of leadership and promotion potential (Figure 3-4). This is a variant of the older 20-70-10 workforce Vitality Curve, where the top 20 percent of performers move up the organization and the bottom 10 percent are moved out.

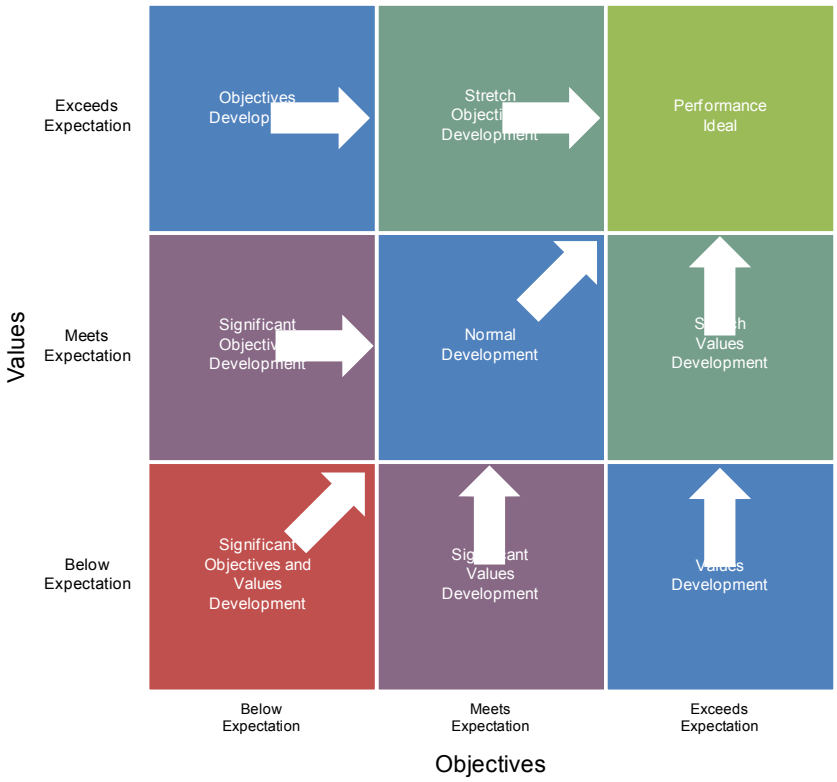


Figure 3-4. The General Electric 9-block Assessment.

Note. Employee performance with respect to objectives (horizontal axis) and values (vertical axis) is assessed into three expectation levels – exceeds, meets, or below – to highlight capability gaps and development need (arrows). Adapted from interview notes.

Introduced in 2008, the 9-block is based on 50 percent objectives performance – a measurable and quantitative metric based purely on an employee's the EMS, G&Os, and Operating Rhythm – and 50 percent values performance – a vague and hard-to-gauge qualitative metric that depends on judgment and observation through self- and supervisor evaluations. The performance categories are rated into one of three expectation levels – below, meets, or exceeds – that highlights capability gaps and the type of development need with respect to an ideal performance (represented as white arrows in Figure 3-4).

Along with the Session C, the 9-block differentiates the most talented employees from the least effective and ensures the effectiveness of the organization by enabling succession planning, pipeline building and leadership development (GE Capital Solutions, 2005b).

Fit-based Hiring and Learning-based Evaluation at Toyota

The hiring process at Toyota is guided by one basic principle: to create a long-term match between employees and the company's environment and values by identifying candidates whose past experience, behavior, and ability to demonstrate such behavior in work-related environments are consistent and fit with those required to succeed at Toyota (Toyota Georgetown, 1999: 10-13).

Common characteristics looked for in potential hires include an enthusiasm for making improvements, the effective communication of ideas, a readiness to listen and learn from others and go to the source or *genba* (the frontline) to grasp the essence of a problem, an emphasis on teamwork, and the initiative, desire, and persistence to resolve problems in ways that fit with the company's values (Osono et al., 2008: 166-167).

It takes time to observe these traits in the work place. For this reason, the hiring process at Toyota includes a qualification period of up to two years, during which new employees are assessed for organizational fitness and understanding of company values prior to becoming full-fledged Toyota associates.

To ascertain advancement potential, Toyota has developed unique criteria to evaluate associates and assess interpersonal competencies, such as how goals are achieved, understanding of task purpose, handling and resolution of issues, fostering of organizational skills, and approach to develop, motivate, and empower people. The evaluation criteria vary with the rank of the associate, with staff-level remuneration based 50 percent on seniority and 50 percent on performance, while for managers and above it is based 100 percent on performance with respect to both process and result (Ibid.: 180). To gauge performance with respect to process and organizational capability, the company uses two key tools: the Critical Output Analysis system and the five-criterion learning-based evaluation.

The Critical Output Analysis system (COPA) is a thorough method to identify training need by fostering understanding of the purpose and competencies needed beyond the standard requirements of a specific job or function. This starts with a self-evaluation, then a team-evaluation, of the competence and importance levels (rated on a five-point scale ranging from very low to very high) of the most relevant interpersonal skills required for a specific task. Such skills could include communication, problem solving, coaching, teamwork, and conflict resolution to attentiveness, respecting diversity, championing change, acknowledging coworker contributions, and recognizing personal limits (Liker & Hoseus, 2007: 136). Training is then tailored to redress gaps in an employee's COPA, identified by the low competency ratings in skills singled out as critically important to fulfill assigned tasks.

To assess advancement potential, Toyota evaluates employees along five learning-based criteria: (1) innovative and creative *problem-solving* unbound by custom or norms and follows a mid- to long-term perspective; (2) persistent and resilient *resolution of issues* that demonstrates appropriate situational judgment and decision making; (3) *organizational aptitude* to prioritize resources, reengineer processes, and manage comprehensive tasks; (4) the ability to *develop talent* and provide fair evaluations, constructive feedback, and pre-

planned mentoring; and (5) *personal magnetism* resulting from the mutual trust and respect of coworkers (Figure 3-5).

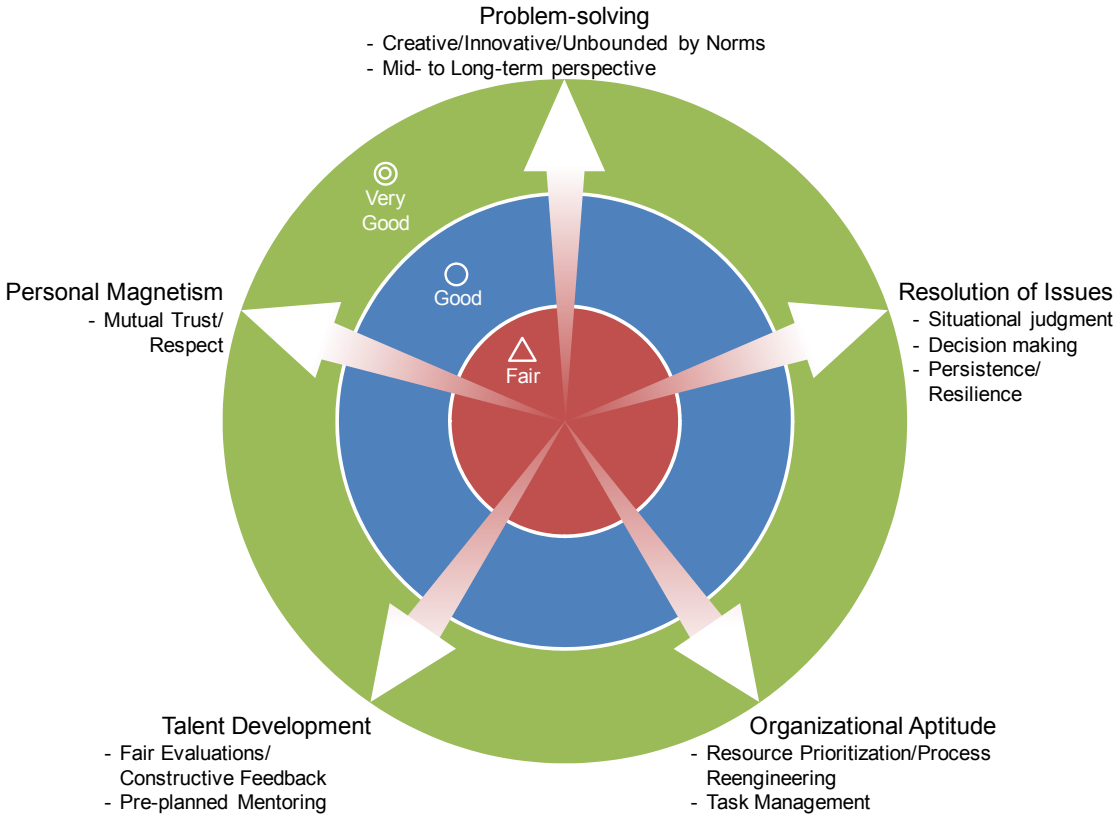


Figure 3-5. The Five Learning-based Evaluation Criteria at Toyota.

Note. Performance with respect to the five criteria is assessed into three levels – very good, good, or fair – to track the advancement potential trend (outward-pointing arrows) of employees. Adapted from Osono et al. (2008: 181) and Miyadai (2004).

All employees evaluate themselves, grading their activities under each category as very good (double circle), good (circle), or fair (triangle), and discuss their self-evaluations with superiors three times a year to keep track of progress and redress development issues (Miyadai, 2004). An employee's advancement potential remains sound when the evaluations trend positively, such improving a fair rating (moving away from the center in Figure 3-5) or sustaining an overall rating of good or better (towards the outer circle in Figure 3-5).

As with the remuneration structure, the five evaluation criteria also differ according to employee rank. For office staff, more weight is given to the first category – the creative handling and resolution of issues, with the emphasis on developing the skills needed to identify and create challenges and build specialized knowledge (Hiroshi Watanabe, personal communication, 2009, August 7). For managers and above, emphasis shifts to the last three categories that emphasize organizational expertise, human resource management, and interpersonal skills.

The five criteria are open-ended and somewhat vague. For example, the last category of personal magnetism (*jinbo*) describes the trust an employee has from coworkers, which is difficult to quantify even if the supervising manager has shared experiences with the employee. To improve the assessment, each category includes more detailed breakdowns. For example, the point on mutual trust/respect under personal magnetism includes additional aspects such as (1) having an open and fair attitude that earns employee trust, (2) empowering others and being a visible role model, and (3) striving to improve workplace morale (Osono et al., 2008: 181).

Another vague criterion that is quintessentially Toyota is persistence or resilience, described in Japanese as *nebari tsuyosa*, which translates literally as "adhesive strength." On the point of persistence/resilience under resolution of issues, two additional evaluation aspects are included: (1) stands forth and demonstrates determination to persist until the very end, even when facing difficult circumstances; and (2) is persistent in convincing and coordinating coworkers and overcoming obstacles (Ibid.: 182). Former president Watanabe is fond of describing this persistence with his favorite saying, "Pick a friendly fight," which he used repeatedly in an interview (2007, October 10). "If your boss refuses you something that you really want to do, don't give up," he said. "Try pitching it two or three times. By the third time, the boss will realize, 'Hey, this guy is serious.'" The 'stubbornness' to push ahead with

an idea and bring it to fruition despite the resistance is a coveted quality at Toyota that defines the persistence the company strives to cultivate in employees as they slowly rise up the ranks (Toyota-shiki Shigoto no Kyokasho, 2005: 35).

3.4 Conclusion – The Talent Management Capability Booster Frameworks

This chapter looked at the talent management infrastructures at General Electric and Toyota, and how each takes a unique approach to the long-term development of 'Moon Shot' talent. This final section characterizes the impact these distinct approaches have on the capability accretion using the capability booster framework, beginning with the performance growth continuum at General Electric, and followed by the know-how amalgamation and practice conformance approach at Toyota.

General Electric's Performance Growth Continuum

General Electric operates a talent management infrastructure that promotes structural change by quickly dispersing 'GE branded' training content through a network of global training centers (in New York, Munich, Abu Dhabi, Shanghai, and Tokyo) and job rotation programs (e.g. CLP, ECLP, FMP, IMLP, HRLP). Highly visible and widely recognized, these training centers and programs entice employees to upgrade their business acumen and learn up-to-date business, functional, and leadership skills used in the company's diverse businesses and divisions. This enticement also increases workforce effectiveness by promoting the shared understanding of the company's business planning and project execution protocols. Another periodic source of change are the dynamic learning environments created as employees of diverse backgrounds congregate during training sessions, prompting free inquiry and the exchange of ideas as they learn and develop together (see Figure 3-6).

The company maintains a vibrant talent-building pipeline that curbs restraint to change in three ways:

- The talent pipeline is always flowing, meaning that employees are constantly developed through a multi-year "continuum" of training courses, rotating job assignments, and mentorships.
- Course training content (e.g. FoL, NMDC, AMC, GLC) is tailored to fit the requirements of job and rank as well as the "me" need of each person.
- Leadership development is tiered, meritocratic, and intensely Darwinian, with promotion up the ranks contingent on meeting challenging performance goals and completing nomination-only courses (e.g. MDC, BMC, EDC, LIG) required for advancement based on work experience.

Hiring screens sift potential hires with respect to growth traits, and evaluations gauge performance against prescribed goals and objectives (e.g. EMS, G&O, OR) as well as conformance and adherence to company values (e.g. 9-block). One caveat concerning this approach is that assessments are susceptible to manipulation, potentially benefitting the advancement of one person at the expense of another and engendering resentment – and breeding restraint to change – among those who feel undervalued or improperly assessed.

The leadership development process is supported by performance evaluations that track succession planning, most notably the Session C and the 9-block. These appraisals weed out undesirable behavioral norms and dispositions that restrain performance and fine-comb the workforce, separating the high achievers from the rest. Although this Darwinian survival-of-the-fittest process can shed capable personnel who develop at a slower pace than others, it also revitalizes the company's pool of leadership talent – a potential source of latent flexible change in the future.

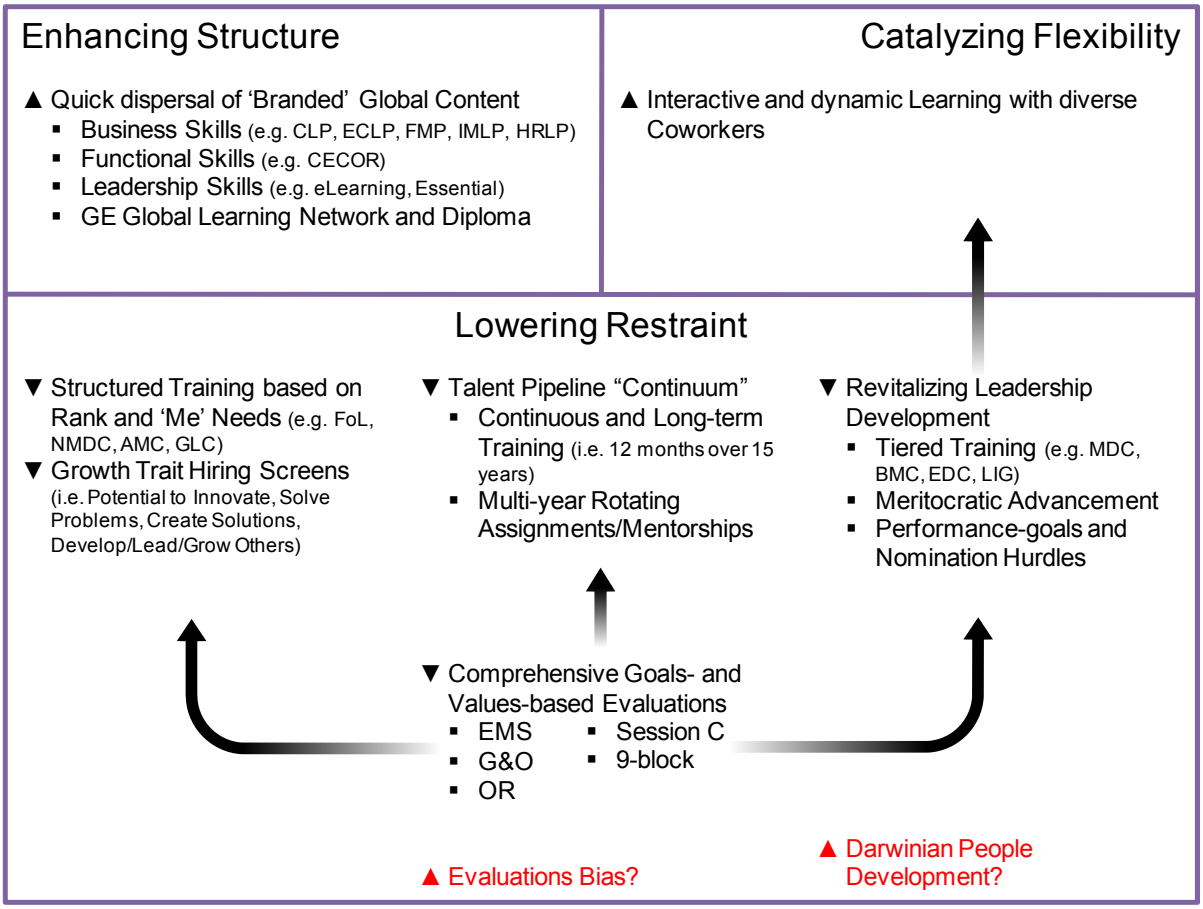


Figure 3-6. The General Electric Talent Management Capability Booster Framework.

Note. Triangles denote direction of impact of discrete conditions with respect to their respective block in the framework. For example, *'branded' global content* positively enhances structured change, whereas *evaluation bias* increases restraint to change. Arrows indicate how some conditions support or reinforce others. For example, *comprehensive goals- and values-based evaluations* support the *growth trait hiring screens* and *revitalizing leadership development*. Created by author.

Know-how Amalgamation and Practice Conformity at Toyota

Talent management at Toyota strives for a deep understanding and conformance to core company values, longstanding practices, and know-how that together promote acceptance (and lessens restraint) to capability-imparting change.

For starters, employee training is almost exclusively hands-on, following an OJT and OJD approach that slowly inculcates practices and values through mentored job rotations and apprenticeships that span years. Organizational coherence and capability increases as employees form a shared understanding of the Toyota Way, conform to standard protocols that promote change (e.g. TPS, TBP), and then impart (by mentoring and instructing) said practices onto others (e.g. new recruits, subordinates, coworkers) in the company's ecosystem (e.g. production centers, sales offices, distributors, dealers).

Employee hiring and development is also geared to increase organizational fit, defined as the clear and demonstrated understanding of Toyota Way values. Fit is assessed through long qualification periods that span years and is paired with instruction that is tailored according to employee ability and task relevance (e.g. COPA). Performance evaluations also stress conformity to company values, using learning-based criteria that vary with rank and responsibility and stress process (e.g. problem-solving, resolution of issues, organizational aptitude) and growth (e.g. talent development, personal magnetism) over result alone (Figure 3-7).

Advancement up the organization maintains an emphasis on Toyota Way values through project-driven coursework that is primarily hands-on. This keeps company values alive through 'Global Content' practices (e.g. TPS, TBP, Hoshin Kanri) that reinforce their everyday relevance and fortifies organizational coherence through shared norms and ways that reduce capability restraint.

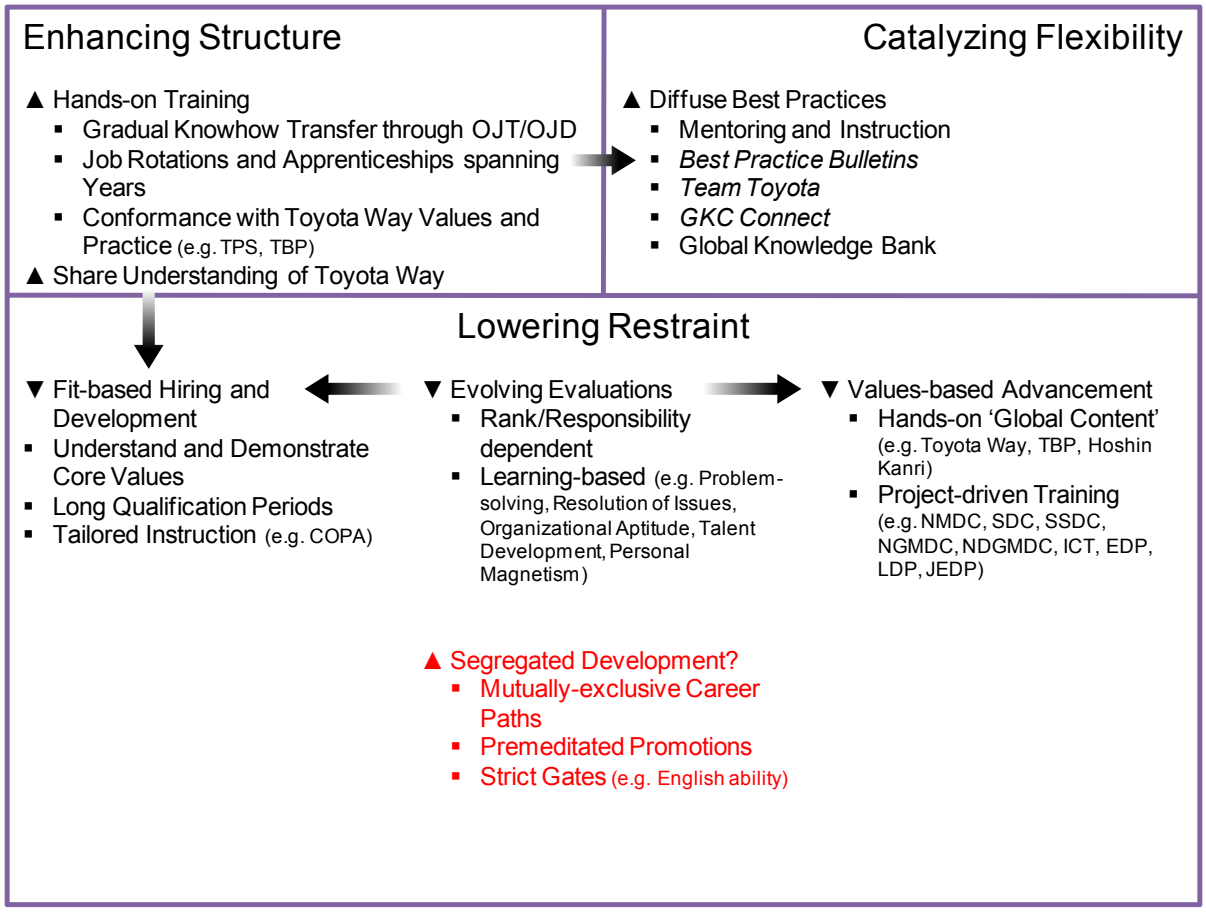


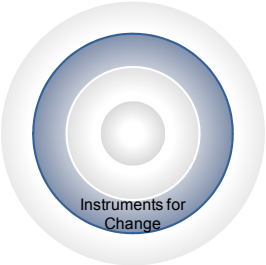
Figure 3-7. The Toyota Talent Management Capability Booster Framework.

Note. Created by author.

One noteworthy outlier in Toyota's talent management infrastructure is the strict career path structure that confines workforce mobility along two mutually-exclusive tracks: shop floor and office. Promotions are premeditated rather than earned – the result of human resource planning that values experience and fit, not just potential and performance. Although segregated, planned advancements are a long-standing and standard practice in the company's gradual and long-term approach to talent development. While this approach lowers restraint to change, it also diminishes capability accretion by keeping talent in preordained silos, limiting prospects for growth among those whose capabilities could be more effectively used elsewhere in the organization.

The next chapter looks at the instruments to drive change – the first inner layer where capability develops in an organization – to show how both General Electric and Toyota have evolved the tools that transform uncertainty and opposing demand into concrete and implementable solutions that stimulate change and fuel growth.

Chapter 4 - Instruments to Drive Change



In a prescient speech at an entrepreneurship conference at Dartmouth College in 2004, General Electric CEO Jeffrey Immelt predicted that companies faced a discerning, differentiated era of declining growth and intense price competition, with clear winners and losers (Kirsner & Hammonds, 2004). "You want a business that is tough?" he asked later during a Q&A session. "Try selling light bulbs [a commodity product] to Wal-Mart," the discount retailer committed to 'Every Day Low Prices' (Wal-Mart Stores, Inc., 2009). This was three years before the onset of the U.S. credit crisis that sparked a global financial recession in 2007.

According to Immelt, the only way for companies to survive and grow in such a tough business environment is to differentiate, to innovate new opportunities creating multiple revenue streams, and to own all customer touch points. In doing so, the biggest challenge is making management ambidextrous, able to contend with the tension of short-term performance AND long-term outlook, of growth AND lower cost, of being highly idealistic AND highly profitable (Lane, 2008, January 25).[41] Cultivating an adroit talent capable of addressing opposing demands requires reevaluating and transforming past practices, coupled with business strategies and tools that prioritize both performance AND result, efficiency

[41] Ever since Collins and Porras coined the term "the genius of the AND" in *Built to Last* (1994), the need to embrace contradictive demands has been enshrined at the center stage of management thinking. Their argument is that successful companies figure out a way to have both A AND B, instead of choosing between A OR B. Thus, such companies do well both in the short-term AND over the long-term. They preserve both a tightly held core ideology AND stimulate vigorous change. Other management writers followed suit, pointing out the need to pursue both continuous improvement AND disruptive technology; both product innovation AND business process innovation; both economies of scale and scope AND economies of speed; both efficiency AND creativity; both global AND local; both personal humility AND world class professionalism, and the list goes on (Osono et al., 2008: 264).

AND value creation, leverage the old AND exploit the new, whilst curbing EITHER-OR thinking that resolves conflicting demand through compromise that reinforces past practice, restricts change, and hinders innovation.

In a similar vein, Toyota also realizes growth by pitting opposing demands, such as operational efficiency (e.g. short product development cycle, supply chain management, just-in-time inventory control, and continuous improvement of standards) and redundancy (e.g. frequent face-to-face contact, passive participation in meetings, middle managers with tasks bearing little or no influence on operational or financial performance, and more staff at regional sales offices vis-à-vis competitors), against each other. The resulting tension stimulates organizational change and renewal.

As Senior Managing Direction Akio Matsubara (2004) described it, Toyota intentionally tries to instill a positive level of tension within the organization using opposing propositions in order to reach a higher level outcome:

> In today's workplace we are constantly confronted with two opposing propositions, sometimes three opposing propositions, sometimes even as many as four opposing propositions. It is a way of deliberately introducing a positive level of tension into the workplace on a regular basis. Each organizational unit avoids making any kind of compromise and we argue it out till the end across the units. This process ensures that we come up with the best solution.

By actively embracing and resolving opposing aims and conflicting demand, General Electric and Toyota push away from the comfort zone and instill a healthy dose of instability and tension in the organization that stimulates change and innovation. This instability catalyzes the synthesis of new solutions beyond opposing traits by continuously pursuing change and self-renewal, not through compromise or balance, but in the transcendence of

opposites (Osono et al., 2008: 21). It is this process that energizes employees and elevates the company to higher levels of capability and performance.

This chapter looks at the instruments to drive change at General Electric and Toyota that transform opposing demands into concrete and implementable solutions that stimulate the development of 'Moon Shot' talent and capability in the organization. This begins with General Electric's growth-driven commercial ecosystem primed to deliver efficient, expedient, and expansive change, followed by the systematic problem-solving and process-improvement approach to drive progress at Toyota.

4.1 Efficient, Expedient, and Expansive Change at General Electric

According to studies of leading and stagnant global companies by The Problem Solving Group, a specialist firm researching the practical application of creativity and innovation, the nine attributes that set apart the 'innovative' organizations that cultivates a climate supportive of creativity from those that do not are: 1) a *challenging* environment where people feel involved and stretched by their tasks; 2) the *freedom* for employees to try new approaches and 3) *take risks* in the face of uncertainty; 4) an *open and trusting* work atmosphere that is 5) serious yet *relaxed*, 6) free of interpersonal *conflict*, 7) where peers have the *time* to generate new ideas and constructively 8) *debate* and 9) *support* each others' ideas (Akkermans, Isaksen, & Isaksen, 2008: 12-14).

To foster an 'innovative' working environment globally, General Electric management redefined growth as a six-part process that links customers, globalization, and growth leaders, to commercial excellence, great technology, and innovation.[42] Embedded in this process are the tools to drive growth with *Efficiency*, *Expedience*, and *Expansiveness* i.e. the concerted and timely delivery of unsurpassed value to an ever more discriminating and diverse customer base.

[42] See Appendix A for an illustrated version of the General Electric Six-part Growth Process.

More importantly, the tools embedded in the growth process, developed internally and collaboratively with business management experts and academics over several years, provide a roadmap that guides the strategic innovation and commercialization of value-added offerings (General Electric, 2007b: 9). This disciplined approach also establishes a unique corporate dialect that reinforces organizational understanding of marketing initiatives and facilitates the communication of business goals, progress, and success. The growth-oriented tools, in order from the oldest to the newest, include the commitment-building Change Acceleration Process, the rigorous cost-reducing Six Sigma approach to business improvement, the A+CEC strategy execution framework, and the customer-focused Net Promoter Score.

Change Acceleration Process

The Change Acceleration Process (CAP) is a project-based model for organizational transformation launched in 1992 under the guidance of then CEO Welch, who sought a way to more effectively manage the process of change in the face of inherent uncertainty and unpredictability (Garvin, 2000: 126). It consists of a clear-cut framework and simple-to-use tools that allow for rapid adaptation and refinement of change initiatives by splitting the change process into seven distinct steps (respectively referred to as CAP 1 to CAP 7): leading change, creating a shared need, shaping a vision, mobilizing commitment, making change last, monitoring progress, and changing systems and structures (General Electric, 2007b: 81).[43]

Instruction in CAP is team-based and, as a type of functional skills training, provided to employees at the company's divisions and business units. CAP trainees, under the guidance of skilled facilitators, themselves experienced CAP practitioners, learn to frame the

[43] For a step-by-step and illustrated description of the key CAP steps that lead, create, shape, and mobilize change, see Appendix B.

scope of "need-to-do" change projects, each one based on actual problems in their respective business or division, using the seven-step method (Garvin, 2000: 127).[44]

The Essence of CAP

"The essence of every successful change initiative," explained Manager Ricky Taguchi (personal communication, 2009, April 27), an experienced CAP instructor at Crotonville Japan, "is trust building and getting buy-in from others." The reason, according to Taguchi, is that every change initiative involves many diverse stakeholders – not just the direct supervisor or business director, but people in other critical functions or divisions in the organization – whose acceptance is crucial to overcome the many tall hurdles that keep the process from moving forward.

Taguchi recalled how he constantly reminds CAP trainees, many of them seasoned managers, that the effectiveness of any change initiative depends not just on the quality of the process, but on acceptance (i.e. buy-in) from all those involved. To illustrate this point, he uses a simple model,

$$\text{Quality x Acceptance} = \text{Effectiveness of Change} \qquad (6)^{**}$$

$$Q \times A = E$$

which outlines the direct impact of change quality (Q) and acceptance (A) on the effectiveness (E) of change.

Although there are different ways to achieve acceptance – through top-down power structures, majority rules voting, or even forced consensus – the preferred approach, one that Taguchi emphasizes during CAP training, is to create mutual consensus among the stakeholders. In his experience, this yields the greatest return over the long-term. But

[44] For a step-by-step and illustrated description of the key CAP steps that lead, create, shape, and mobilize change, see Appendix B.

achieving it requires those responsible for the change initiative to be expert negotiators, clear communicators, and effective mediators.

"Every day is a day to create buy-in," Taguchi likes to remind employees during their CAP training. Otherwise, he warns, the momentum of a change initiative can collapse if team members neglect to appreciate the human side of problem solving, either by not recognizing the need to energize their peers, neglecting to "share the glory," assuming that technical solutions are sufficient to bring about acceptance, not involving others whose expertise is critical due to time constraints, or using inappropriate conflict resolution styles during critical negotiations (General Electric, 2007b: 152). This is why, according to Taguchi, CAP trainees are required to take two and half days of intensive training in facilitation management and conflict management skills. In addition, clear and concise communication skills are considered crucial, since presentations are the principle mechanism to foster "buy-in" for a change initiative, helping explains why presentation skill acumen is so highly regarded in employee performance evaluations.

Six Sigma

Developed in the late 1980s by Motorola, Inc., the global communications technology company, Six Sigma is a transformational approach to business management strategy that focuses an organization towards 1) understanding and managing customer requirements by 2) aligning key processes to achieve those requirements, 3) using rigorous analytical analyses and quality measurement tools to minimize process variations to 4) drive swift and sustainable improvements throughout the entire chain of business activities (Motorola, 2009b).

Widely adopted by numerous companies in varied industries, this project-based management approach targets cost-reduction by following a top-down structure, with Six Sigma experts known as 'master black belts' guiding and instructing less experienced 'black'

and ‘green belts’ in variation reduction methodology, results metrics, and problem solving skills.[45]

At the center of the methodology is the DMAIC process improvement model (an acronym for *Define* opportunity, *Measure* performance, *Analyze* opportunity, *Improve* performance, *Control* performance) that, when applied as a management system, aligns a company’s business strategies towards critical improvement efforts, mobilizes effective teams to tackle high impact projects, and accelerates sustainable improvement results (Ibid.).[46]

Adoption by General Electric

Six Sigma became widely adopted at General Electric during the 1990s under former CEO Jack Welch, who spearheaded the transformational approach into all aspects of the business, first in production-related processes (e.g. procurement, manufacturing, and logistics), then in other areas not directly linked to production, such as sales and marketing. By the late 1990s, the cost-reduction program was integrated into virtually all operational aspects at General Electric. In human resource development, completion of at least two multi-year Six Sigma improvement projects became requisite in the leadership training programs, and expertise in Six Sigma factored strongly in personnel promotional decisions (Yagi Yosuke, personal communication, March 25, 2009).

In his last letter to shareholders as CEO before stepping down in 2001, Welch outlined his vision of the company’s future leadership, one strongly influenced by Six Sigma:

> It is a reasonable guess that the next CEO of this company, decades down the road, is probably a Six Sigma black belt or master black belt somewhere in

[45] Other Six Sigma specific terms include ‘sigma levels,’ a metric that counts defects per million opportunities (or DPMO) with the metric of six sigmas equating to 3.4 DPMO, and ‘six sigma champions,’ those tasked with the day-to-day responsibility of Six Sigma project teams. See Motorola (2009a) for a listing of Six Sigma terminology and acronyms.

[46] For a more comprehensive look at the Six Sigma business transformation approach, including the various quality-management tools, methods, and procedures used in the process improvement methodology, see Pyzdek and Keller (2009).

> [the organization] right now, or on the verge of being offered – as all our early-career (three to five years) top twenty percent performers will be – a two-to-three year black belt assignment. The generic nature of a black belt assignment, in addition to its rigorous process discipline and relentless customer focus, makes Six Sigma the perfect training for growing 21st century [General Electric] leadership. (General Electric, 2000: 6)

Lean Six Sigma

Lean Six Sigma, a Six Sigma variant developed at General Electric during the mid 2000s, integrates into the cost-reduction effort the seven-waste minimization of Lean Production based on the Toyota Production System i.e. *overproduction*, inactive *waiting*, unnecessary *transport*, extra *processing*, excess *inventory*, extra *motion*, and *defects* (Womack, & Jones, 1996: 351-352). This was done in recognition of the diminishing returns from the comprehensive Six Sigma reforms already deployed in the company's key operational processes (Peilung Yang, personal communication, March 15, 2009).

Lean Six Sigma was first applied at the General Electric Yokogawa Medical Systems plant in Hino, Japan, where magnetic resonance imaging (MRI) scanners used in medical diagnostics and computed tomography (CT) systems that take cross-sectional images of the human body are produced. At the CT production line, parts- and tool-shelves adjacent to the assembly area were replaced with a series of flexible-use wagons outfitted with the same tools and parts that could be moved to within arm's reach of where staff performed their tasks. The results with respect to waste-reduction were two-fold: the total distance travelled by a line worker while putting together a CT unit was reduced from 1,600 to 192 meters (extra *motion* reduction), and unit assembly time was cut by a third (inactive *waiting* minimized) (Yamakawa, Ito, & Yamazaki, 2008: 34).

Akihiko Kumagai, President of Yokogawa Medical Systems, attributes the Lean Six Sigma approach, and its Toyota-inspired improvement approach based on kaizen and problem-solving at genba, with elevating manufacturing productivity by almost 20 percent. Since 2007, he has spearheaded efforts to spread the lean approach throughout General Electric by dispatching experienced practitioners to plants in the U.S., Europe, and Asia to instruct others in the Lean Six Sigma method (Ibid.: 35).

From Six Sigma to Commercial Excellence

From 2003 onwards, as General Electric shifted corporate values to emphasize leadership growth traits (i.e. clear and decisive thinking, external focus, expertise, inclusiveness, and imagination described in Chapter 6) under CEO Immelt, the role of Six Sigma also began to shift. Still a critical activity in operational activities due to its emphasis on quality and efficiency through sustainable and deployable cost-reducing improvements (or waste-reducing in the case of Lean Six Sigma), its application "everywhere" especially in sales and marketing was increasingly considered as impractical and unnecessary (Peilung Yang, personal communication, March 15, 2009).

In its place, a new set of customer-focused and commercialization-driven tools was developed by the Commercial Council, a specialist team of company executives, industry experts, and management academics established in 2005 under Immelt to recalibrate General Electric to deliver better value to ever more granular consumer segments (Yagi Yosuke, personal communication, 2009, March 25; Brady, 2005). These new tools include the A+CEC and CECOR frameworks designed to enhance the "Commercial Excellence" of the General Electric growth process and cultivate world-class sales and marketing talent.

As a result of this shift towards a more intense customer focus, Six Sigma projects were eventually dropped from the leadership training curriculum, and from 2007 onwards

sales and marketing managers were no longer required to certify as 'black belts' to continue advancing up the ranks (Tatsuhito Sugaoi, personal communication, 2009, May 28).

A+CEC Strategy Execution Framework

The most recent addition to the General Electric arsenal of tools, one that has unseated Six Sigma as the new benchmark for excellence in sales and marketing, is the A+CEC strategy execution framework, a multi-phased tool to thoroughly *Appraise*, *Calibrate*, *Explore*, and *Create* strategically viable and commercially defensible business concepts.

The brainchild of CEO Immelt's Commercial Council, A+CEC pairs the 'what' of marketing (i.e. tools such as industry analysis, value propositions, customer segmentation, and commercialization) with the 'how' of marketing to facilitate the creation, filtering, conceptualization, and testing of new product and service ideas (General Electric, 2007b: 10-11).

There are two sides to the A+CEC process: *strategy* development and execution, and concept *commercialization*. Both sides are based on the question-driven multi-level planning model known as CECOR, an embedded process that incorporates elements of transformational rigor from the Change Acceleration Process (Figure 4-1).

The CECOR model and the strategy development and execution phases of the A+CEC framework are described below.

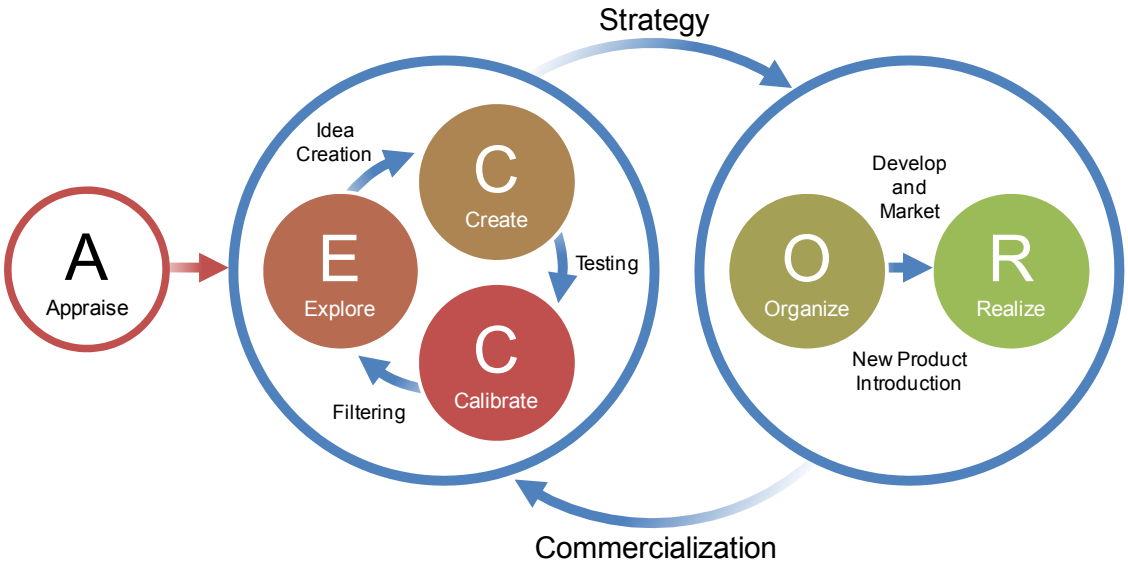


Figure 4-1. The A+CEC Strategy Execution Framework.

Note. The framework has two sides: the strategy development and execution steps of *Appraise*, *Calibrate*, *Explore*, and *Create* (the left half), and the commercialization elements of *Organize* and *Realize* (the right half). Embedded in the framework is the question-driven CECOR multi-level planning model (represented by the five solid circles). Adapted from General Electric (2007b: 1, 14).

CECOR

CECOR is a question-driven multi-level planning model to channel commercial intelligence into viable strategies for 'new product introductions,' General Electric lingo for the commercialization of technical or business innovation (Ibid. 14). The model connects idea creation to growth strategy by splitting the growth process into five steps – *Calibrate*, *Explore*, *Create*, *Organize*, and *Realize* (hence the CECOR acronym) – each one outfitted with the guidelines, analyses techniques, and deliverable expectations that funnel idea creation, development, and execution into a structured process to achieve growth.[47]

Shortly after it was created in 2005 by the GE Commercial Council, CECOR was rolled out to middle management (those in the LP and SP layers) through training sessions at

[47] See Figure A-7 in Appendix A for a detailed schematic of the CECOR multi-level planning model.

the GE Global Learning Centers. Once back at their respective business or division, this first wave of trainees then took charge implementing and instructing others to use the CECOR model (Yagi Yosuke, personal communication, March 25, 2009).

In the words of a former trainee, CECOR is not unlike a guided how-to "MBA playbook" that descrambles the maze of business marketing tools into a logically ordered and executable roadmap (Peilung Yang, personal communication, 2009, March 15). For example, the first CECOR step, *Calibrate*, refines the growth funnel and narrows the project scope by using simple probing questions to clarify "which" industry to look at, "who" are the customers, and "what" it is they need. The tools supporting this process of refinement include scenario planning, value chain analysis, among others. Progress to the next CECOR step, *Explore*, which has its own unique set of questions and analysis tools, is contingent on effectively *Creating a Shared Need* among relevant stakeholders, the second step of the CAP transformational process.

Appraise

According to the *A+CEC Book of Knowledge*, a frequently updated training document first written in early 2007 to support instruction in the A+CEC process, to 'appraise' the market is to verify that the 1) right questions for commercial leadership are being asked, 2) performance scales are established for the marketing strategy, and that 3) deliverables and incentives align with business objectives (General Electric, 2007b: 23).

The main deliverable in this phase is the *Project Charter*, a one-page description of a project's business case, problem statement, goals, scope, team members, and milestones.[48] The intention behind the charter is four-fold. First, it clarifies team objectives through problem and goal statements that describe the impact of an unmet customer need. Second, it keeps team members focused by defining the project's scope (e.g. the stakeholders, resource

[48] Examples of the Project Charter, including an example based on a version used in A+CEC training, are shown in Figure A-8 of Appendix A.

constraints, time commitments, professional what's-in-it-for-me incentives). Third, it aligns organizational priorities by linking the A+CEC phases to realistic milestones that do not miss the window of opportunity. And fourth, it transfers responsibility by assigning roles, levels of authority, and progress report protocols to a project team composed of members chosen based on their functional, hierarchical, and expertise fit (Ibid.: 28).

The ARMI model (from the leading change step in CAP) plays an important role in the appraise phase to establish team and stakeholder agreement regarding the marketing objectives in the charter. This also applies to the projects' performance scale metrics, which have to meet a minimum expectation threshold levels early on in the process of formulating the charter.

Calibrate

To 'calibrate' a project is to specify the industry, the customers, and their unmet wants or needs. This involves three steps: *mapping the market* to scan for opportunity, *developing customer insight* into the unmet needs of discrete consumer segments, and *creating a shared need* to build project support (the second step in CAP).

This first step of *mapping the market* involves four tools. The first tool is *scenario planning*, looking ahead on a three- to five-year time horizon, to build insight and assess the industry dynamics that may impact the realization of result. One caveat in this analysis that instructors remind trainees is to be wary of the tendency to overstate the effect of recent events or data, a bias that often results in skewed or unrealistic scenarios (Ibid.: 44). The second tool is *value chain analysis* to disaggregate an industry and incumbent competition into constituent activities to reveal critical sources of competitive advantage. The third tool is *influencer mapping* to identify the key decision makers and purchase influencers in an industry or business (e.g. the users, influencers, buyers, deciders, and gatekeepers in a business-to-business environment). The fourth tool is *profit pools* to reveal where profit is

generated along the value chain, guiding the concentration of activities towards those processes with the highest level of profit margin (Ibid.: 48, 54, 57-58).

Two tools are deployed in the second 'calibrate' step of *developing customer insight*. The first tool is the *Customer CTQ* (critical-to-quality) analysis to disaggregate the values (i.e. why they buy or do not buy), benefits (i.e. what they seek), and attributes (i.e. what to offer) into quantifiable attributes for specific customer segments (Ibid.: 62). This works in conjunction with the second tool, the *Segmentation-Targeting-Position Process* to pinpoint the valuable customer segments that are substantial to work with, accessible to sell to, different from others, can be marketed to, and are expected to exist beyond the short-term (Ibid.: 67, 70).

To improve the segment identification process, A+CEC practitioners utilize a needs-based segmentation method, with clearly defined goals and outputs, that is predictive of purchase motivators and yields insight into value drivers by clustering segments around their needs.[49] This is different from traditional segmentation techniques based on easily observable characteristics that offer undifferentiated insight and are easily replicated (Ibid.: 77).

The final step to 'calibrate' a project is the CAP step of *creating a shared need* to build shared recognition among team members and other key constituents of the need and logic behind the project.

Explore

To 'explore' is to look at the internal viability of a project and verify the capabilities and strategic requirements to see it through. This assessment has five stages: assess the *ability to win*, *clarify business objectives*, *assess strategic fit*, *develop an execution strategy*, and *shaping a vision* (the third step in CAP).

[49] The steps, goals, and outputs of the needs-based segmentation method are shown in Figure A-9 of Appendix A.

Ability to win is a basically a capability assessment; how does the company stack against the competition with regards to catering to the needs of specific customer segment. This stage relies on NPS survey data to adopt the perspective of the customer in the segment under consideration, an approach referred to as "perception is reality" (Ibid.: 91).

In the *clarify business objectives* stage, strategic and operational components are prioritized based on the attractiveness of a particular customer segment. For example, the prioritized strategic objectives of a project could be to first "increase profit contribution of product X" and second "allow a slight reduction in market share." The corresponding operational objectives could then be "from 62 to 69 percent" and "from 12 to 10 percent over 18 months," respectively. The customer segment attractiveness is then rated using criteria aligned with the operational objectives, such as which segments "will grow by X percent" or "have few incumbents" (Ibid.: 98-99).

To *assess strategic fit* is to determine the company's capability baseline in technology, people, and financial resources. Gaps between internal capabilities and their external criticality can then be identified and, depending on their capability and criticality combinations, influence execution decisions (Ibid.: 103-105). For example, if one operational component (technology or people) has a low level of externally critical capability, one option is to 'prune' the component by viably upgrading it through an external acquisition. Alternatively, if the component has a high level of non-critical capability, it could be efficiently 'leveraged' without further need of development or resource investment.[50]

In *develop an execution strategy*, project teams have to build consensus on which customer segments to keep, pursue, defend, or abandon, either by 'doing better' than rivals, 'differentiating' from them, or 'redefining the market' by introducing a genuine product or service innovation. These decisions rely on the *strategic position analysis* tool that compares

[50] An example two-by-two capability and criticality matrix, including the execution implications for each quadrant, is shown in Figure A-10 of Appendix A.

segment attractiveness to the relative ability to compete, a derivative of the product portfolio management approach. During A+CEC training, managers are reminded not to overlook potential moves by competitors during this analysis, as these can have severe implications on execution strategy (Ibid.: 118-119).

The last stage of 'exploring' a project is *shaping a vision*, the fourth step in CAP, to build recognition among employees of the expected outcomes in concrete and actionable terms.

Create

The final stage in the strategy development and execution side of the A+CEC framework has three steps. The first is writing the *position statement* that internally clarifies a project's mission – what the new product or service offering must accomplish in the market. This purpose of this internal statement (it is never shown to customers) is to "bring to life" the offering's positioning in the "minds of customers" in a way that distinguishes it from existing alternatives and competitors (Ibid.: 132). This statement feeds the second step, articulating the *value proposition*, a description of the value the new offering promises to provide to customers and the marketing mix that will deliver it. This step uses the 4P framework to determine which channels (place) will deliver the promised value (product), how to generate awareness of the offering (promotion), and the financial conditions to transact it (price). The final step is *mobilizing commitment* (the fifth step in CAP) to develop a shared understanding of the diverse stakeholder interests and build the requisite critical mass of support that bears the project forward, thus keeping it from running out of steam and stalling midway through the process.

Net Promoter Score

The most recently adopted tool at General Electric is the Net Promoter Score (NPS), a simple assessment methodology based on single question scoring to create insight into

customer need or interest for a specific product or service offering (Yagi Yosuke, personal communication, 2009, March 25). Developed by software company Satmetrix Systems and business strategist Fred Reichheld, a fellow at the management consultancy Bain & Company, and popularized in his book *The Ultimate Question* (2006), the NPS practiced at General Electric is based on the premise that customers can be classified into three types – Promoters, Passives, and Detractors – whose aggregate response to a simple question (e.g. "Would you recommend this product/service to others?") yields insight into product or service performance as seen through the customers' eyes (Ibid.).

Customer classifications depend on their responses, scored on a 10 point scale as follows:

- **Promoters** (score of 9 and above) are loyal enthusiasts who fuel growth because they are less price-sensitive, increase annual purchases more rapidly, and provide more positive referrals relative to other customers.
- **Passives** (score of 7 to 8) are satisfied but unenthusiastic customers who are vulnerable to competitive offerings.
- **Detractors** (score of 6 or lower) are unhappy customers whose lack of loyalty to a specific brand/company, price-sensitivity, and negative word-of-mouth damages the brand, increases service costs, drains customer-service resources, and impedes growth.

A company can then calculate its 'growth engine' rating by subtracting from the percentage of customers who are promoters the percentage who are detractors (Satmetrix Systems, 2009b). If the 'growth engine' runs at perfect efficiency, 100 percent of customers are converted to promoters. Conversely, if the 'growth engine' is negative, then more customers are converted into detractors that to promoters. According to the NPS developers,

the most efficient companies have NPS ratings of 50 to 80 percent, compared to only 5 to 10 percent at an average firm, where promoters barely outnumber detractors. A low NPS rating explains why a company cannot sustain profitability or growth, regardless of how much it invests developing and marketing new offerings, unless it reverses the negative conversion of its customers (Ibid., 2009a).

According to GE Money Product Manager Tatsuhito Sugaoi, target NPS ratings above 50 percent now serve as benchmarks to gauge price elasticity for new products and services, especially in the banking and retail finance sectors, where the method has proven quite useful to test pricing schemes for customers in developed markets who have become increasingly reticent to new offerings ever since the global recession started in 2007.

However, arriving at such a result is not always easy. Senior Human Resources Manager Yagi Yosuke admitted that the most difficult part of the NPS approach is asking the right question, often making the preparation phase of the study a detailed and time consuming affair (personal communication, 2009, March 25).

4.2 Systematic Problem-Solving and Process Improvement at Toyota

As a small player and latecomer to the automobile industry, Toyota relied heavily on bank loans to finance the initial expansion of production facilities and support marketing and technology development. By the time it started producing its first car in the 1930s, Ford had already sold over 15 million Model T's and General Motors was the world's largest car manufacturer, with operations spanning the globe (Osono et al., 2008: 187). Despite its small-fish big-pond position, the company's attitude towards resource management did not change until 1950, when its near financial collapse after years of stagnant domestic sales during the post-Second World War recession triggered a crippling labor dispute that culminated with the layoff of one-fourth of the workforce.

From that point onward, every company activity was approached with an unrelenting focus on eliminating *muda*, *mura*, and *muri* (waste, unevenness, and excess burden). This approach lowered production costs throughout the supply chain and prevented a recurrence of another financial crisis. This penny-pinching meant minimizing idle inventory levels on every production line, a process that prompted just-in-time sourcing of parts and the birth of the Toyota Production System (TPS) (Ibid.: 188).

From the late 1950s onward, TPS was refined, and practices such as stockless production or *kanban* and adopting industry best practices (or world-class manufacturing) were introduced. Toyota minimized the expansion of production outside of Japan, choosing instead to concentrate TPS know-how at its domestic plants. Not until the 1980s did the company start manufacturing outside of Japan and began exporting TPS principles to its overseas production lines to produce high-quality cars at low cost regardless of location (Ibid.).

From the Toyota Production System to the Toyota Business Practices

By the mid 2000s, the Toyota Production System had reached a turning point. As the company continued expanding throughout the 1990s, maintaining a shared understanding of core Toyota Way values, such as continuous improvement and respect for people, amongst its growing and diverse workforce became increasingly difficult.

Instead of one standard approach to problem solving and business processes, individual interpretations of Toyota Way principles slowly appeared, especially at the retail level, and along with it differences in how to apply the Toyota Production System. The escalating variations, though relatively minor from person to person and from region to region, continued to swell throughout the 2000s as the company added more and more

facilities outside Japan, especially in the U.S. and Europe.[51] This situation prompted management, led by former President and Chairman Fujio Cho, to change its approach to Toyota Way instruction and practice (Toyota Institute, 2005: 2).

One factor contributing to the inconsistent application of Toyota Way practice rest in the scarcity of skilled TPS instructors and the limited training capacity of the Motomachi Global Production Center; a situation partially resolved with the expansion of train-the-trainer instruction and the addition of regional production centers in the U.S., Europe, and Asia that significantly boosted training intake. The other factor lay in the lengthy structure of the job instruction method that took years to master, itself based on the Plan-Do-Check-Act (PDCA) cycle made popular by statistician and business consultant W. Edwards Deming during his lectures to Japanese companies in the early 1950s (Liker & Hoseus, 2007: 128-129). The method has four steps, used in both shop- and office-level training, which in PDCA format are:

- Plan: Develop a plan to prepare trainees by outlining the major steps to learn, the success and failure criteria, and the reasons why each step is performed as indicated.
- Do: Put into action and demonstrate an operation and its related tasks, and get trainees to perform all of them.
- Check: Verify that trainees can carry out the operations on their own while providing a means for them to seek assistance.

[51] In the 10-year period between 1997 and 2006, Toyota opened 30 new plants around the world. The two key regions on the receiving end of investment were the United States and Europe, where direct investment in new production centers, logistics facilities, centers for research and development, training facilities, and support centers exceeded $14 billion and $8 billion, respectively, from 1990 to 2006 (Toyota Motor Corporation, 2009e: 12; 2008b; 2007d: 22-28).

- Act: Follow-up on trainee performance, encouraging questioning into what worked and what did not, before adjusting or forming a new plan that builds on past achievement.

The job instruction steps are an expression of the process driven approach to business at Toyota, where problem-solving skills are considered a critical capability that must be implanted in all employees early in their careers through intensive and constant training (Osono et al., 2008: 73). Akio Matsubara (2004) remarked on this long-term approach:

> Up until an employee's tenth year with the company, we repeatedly administer a three-stage training process designed to develop problem-solving skills. All Toyota employees, domestic or overseas, learn problem-solving skills as the basis of Toyota's fundamental approach to getting work done.

To reinforce understanding of the Toyota Way principles and realign Toyota Way practice across the organization, a new action-oriented method to problem solving was introduced in April of 2005. Published in English as *The Toyota Business Practices* (TBP), the new method explicitly outlined specific business applications based on a structured problem-solving framework that put the Toyota Way values into action. Its aim was to create a new business management approach and a common language that would allow all employees to grow as professionals and master the routine of solving problems every day in ways that contributed to society, the customers, and the company (Toyota Institute, 2005: 2).

The new TBP standard, along with the tools that support it, has three basic modes:

- *Applying* the TBP to facilitate effective problem solving and improve existing standards
- *Visualizing* the problem-solving process using *Mieruka*, *Obeya*, and A3 reports

- *Establishing* support for TBP-driven improvements through consensus-building *Nemawashi* and *Yokoten* best-practice sharing

Applying the Toyota Business Practices

Considered a while-collar version of shop-floor Toyota Production System practices such as kaizen, the Toyota Business Practices require a participative approach to problem solving that draws heavily from the PDCA improvement cycle (Yamakawa, Ito, & Yamazaki, 2008: 28-29). The TBP framework itself has eight steps, each with its own set of sub-steps or mini-objectives (see Figure 4-2), and the entire process is recursive. This means the process constantly repeats, with each successful outcome structured into a new standard that replaces the ideal situation, and unsuccessful outcomes becoming the new baseline for the next round of problem solving.

The eight TBP steps, grouped according to the PDCA sequence are:

Plan:
1. Clarify the problem
2. Break down the problem
3. Set a target
4. Analyze the root cause
5. Develop countermeasures

Do:
6. See countermeasures through

Check:
7. Monitor both results and processes

Act:
8. Standardize successful processes

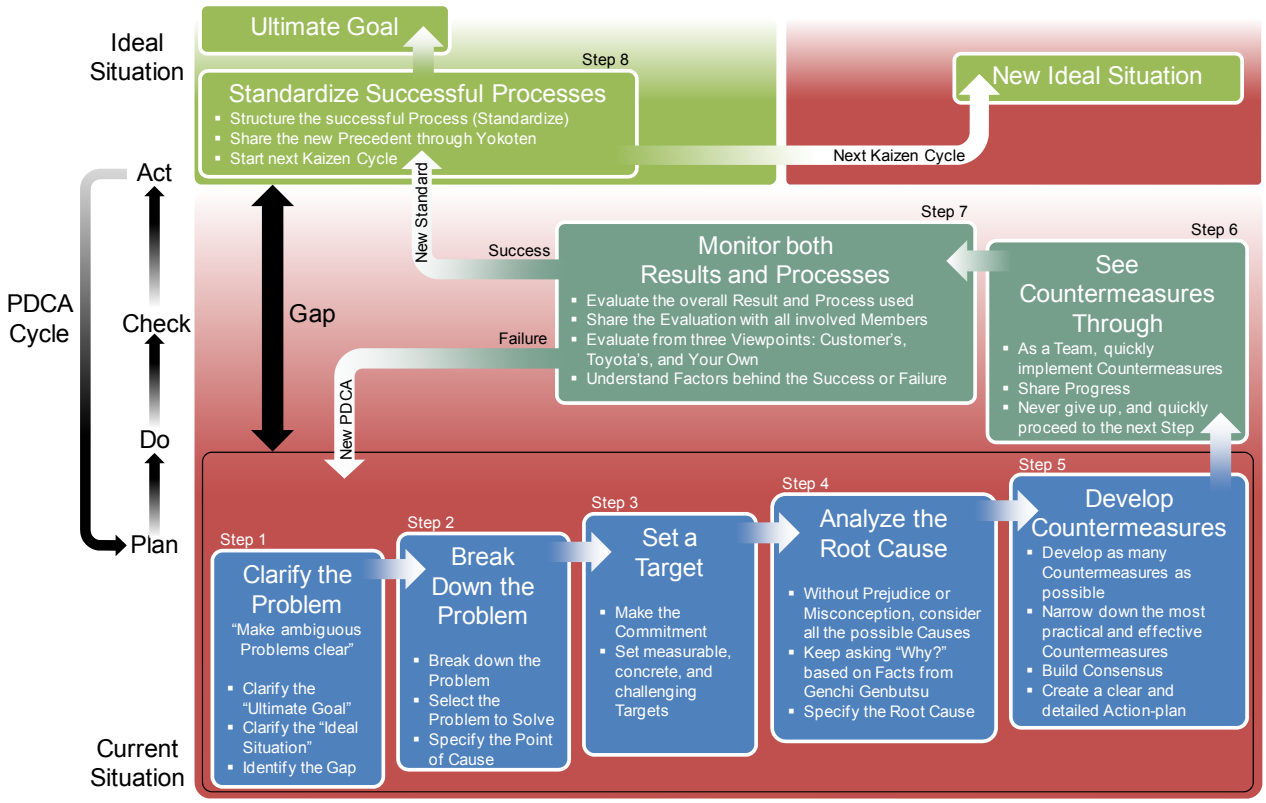


Figure 4-2. The Problem-solving Flow of the Toyota Business Practices.

Note. The process has two levels – the current situation (across the bottom) and the ideal situation (across the top) – that are separated by a gap (vertical black arrow). The eight steps are grouped according to a PDCA cycle (on the left), with steps 1-5 belonging to the Plan phase, step 6 to the Do phase, step 7 to the Check phase, and step 8 to the Act phase. The process is recursive, so if the outcome of applied countermeasures in step 7 fails to overcome the gap separating the current situation from the ideal, then the problem-solving sequence restarts from step 1. Adapted from Toyota Institute (2005: 3-5) and interview notes.

Instruction in TBP begins with a case-driven assignment on topics related to the trainees' functional responsibilities, who then return to their workplace and resolve issues on site (Ibid.: 29). Although each step in TBP is important, the focus of instruction gravitates towards four critical junctures in the process: The all-important first step of *Identifying the "Gap,"* the fourth step of *Identifying Root Causes*, the seventh step of *Monitoring both*

Results and Processes where recursion can take place, and the final step of *Raising the Standard*.

Identifying the "Gap" – The First Step

Many of the Toyota managers interviewed for this study emphasized that the most important step in the eight-step process is the first – identifying the "gap" – which involves clarifying the ultimate objective (the 'ideal situation' across the top of Figure 4-2) in relation to the direction of immediate endeavors (the 'current situation' at the bottom of Figure 4-2). The stated objective of the first step – "To make ambiguous problems clear" – requires employees to think about the true objective, or the 'objective of the objective.' TBP practitioners learn that without a clear and true objective, follow up steps can get obscured, potentially leading to the analysis of the wrong problem (TBP step 2) or the setting of targets based on an inappropriate objective (TBP step 3). Consequently, even a very carefully detailed improvement plan could yield narrow benefits that are of little use elsewhere in the company, thus failing to broadly close the gap separating the status quo from the target ideal.

President Akio Toyoda recalled how his training in problem solving as a junior-level manager emphasized the importance of clear and unambiguous objectives:

> The objective should have the public and society in mind. Otherwise, the [supervisors] would ask things like, "Do you really expect to be a full-fledged member of this company with the kind of objective you've written down?" When you do this, you really need to think through what the true objective is. Senior associates would be critical of us in a severe but constructive way, pointing out the need to have clear, concisely thought-out objectives. (Osono, 2007: 13)

To avoid straying onto a misguided path of wasted effort, a critical discipline in this first step is to keep the strategic focus of the TBP objective narrow enough to make problem solving practical yet sufficiently dispersed so as to encompass true objectives that align with company aims.

According to Mike Morrison, Vice President and Dean of University of Toyota, explained that effective TBP objectives should be strategically broader than the process-oriented problem-solving approach of the Toyota Production System:

> The University of Toyota facilitates a leadership discussion in support of [TBP] that precedes the very focused problem-solving approach. It is important to get [employees] up on the balcony to get the larger, more strategic view of what their business unit needs to accomplish… Unfortunately, in our urgent response [to problems], we can frame the problem and the possible solutions too small. (Liker & Hoseus, 2007: 471)

Morrison further emphasized that managers have to be vigilant about guiding the TBP process towards maximizing the creation of value for the customer, not just the resolution of problems. He suggested that one potential approach involved adapting TBP to tackle "open system" problems – issues that become magnified in scope due to their intense complexity and long-term time frames (Ibid.).

Identifying Root Causes – The Fourth Step

The next critical step in the TBP process is identifying the root cause of a problem, which involves the routines of going "to see things firsthand" and asking "why" five times about every issue, a custom first espoused by Taiichi Ohno, creator of the Toyota Production System (Toyota Motor Corporation, 2001: 9). He often cited the following example (often used in training Toyota Way sessions) of a welding robot that suddenly stopped in the middle

of an operation to teach others the usefulness of asking "why" five times to reveal the root cause: 1) *Why did the robot stop?* The circuit was overloaded, causing a fuse to blow; 2) *Why was the circuit overloaded?* There was insufficient lubrication on the bearings; 3) *Why was there insufficient lubrication on the bearings?* The oil pump on the robot was not circulating sufficient oil; 4) *Why was the pump not circulating sufficient oil?* The pump intake was clogged with metal shavings; 5) *Why was the intake clogged with metal shavings?* Because there was no filter on the pump (Toyota Motor Corporation, 2006: 16).

There are two points to Ohno's example. The first point is to teach Toyota employees that to ask "why" five times is to thoroughly investigate a problem and track down its root cause. The second point is that asking is not enough; individuals must go and see the source of a problem (where it occurs) for themselves. Only then can they build a logical hypothesis to explain a potential cause, prove or disprove the hypothesis based on confirmed facts, build new hypotheses, and repeat this sequence until the root cause is tracked down. Once identified, the root cause feeds the next step in the TBP process where potential countermeasures with the highest level of effectiveness, along with clear and detailed deployment plans, are developed (TBP step 5).

Monitoring both Results and Processes – The Seventh Step

Regardless of the outcome of the countermeasures carried out during a problem-solving process, there is consistency of progress that builds on the experience gained from past experimentation. This is the purpose of the seventh step in TBP, when both result and process are monitored to check whether or not the countermeasures set in motion have achieved a higher standard level. The evaluations must consider three viewpoints – the customer's, the company's, and the employee's – to build a broad understanding of the factors underpinning success or failure that then guides the next cycle of problem solving (Toyota Institute, 2005: 6).

Evaluating problem-solving outcomes in this manner enables a positively recursive process whereby TBP practitioners can benefit from both success and failure. So, when an experiment works, they can devote time and effort to institutionalize the successful process and embed it into the company's standard work routines. Or, should an experiment fail, they can learn from the experience and reboot the process by reconfirming facts, modifying the plan, outlining new countermeasures, and begin problem solving once more.

Raising the Standard – The Eighth Step

The final step in the TBP process is where successful practices are established as new standards that are then shared throughout the organization. The new standards then become baselines for the next cycle of improvement (kaizen), improving the odds that higher standard levels will emerge somewhere in the organization (indicated as a 'New Ideal Situation' in the top right corner in Figure 4-2). TBP project champions are advised never to rush or overlook this final step, even when facing severe time or resource constraints. The reason, they learn, is simple: by not devoting the time and effort required to effectively incorporate and institutionalize proven endeavors with existing processes, the new practices will become lost as organizational memory, leading to the wasteful reinvention of the wheel (Osono et al., 2008: 84).

While TBP process is geared towards institutionalizing what works, the structure of the final step assumes a somewhat pessimistic outlook that even the newest practice will not be effective forever. This is why the TBP process emphasizes the importance of monitoring the effectiveness of successful practices.

According to Naomi Ishii, Group Manager at the Toyota Institute, this reflects the company's continuous improvement culture, where employees are constantly reminded to never be satisfied with past achievements, to reject the status quo, and that doing nothing is

the worst thing for the company (personal communication, 2006, November 1). Ishii also emphasized importance of continually raising the bar:

> Once we solve a problem and reach a new level we have to raise our standards, otherwise they deteriorate as the environment changes and new problems arise… When new problems suddenly become visible, we have to reconstruct our indicators and renew our objectives [and raise the bar]. If we don't do this, then after ten years, [every past accomplishment] will have lost all meaning.

Visualizing the Problem-solving Process

Toyota has learned that sharing information enhances the problem-solving process by fostering a common understanding in the organization of the real state of affairs surrounding an issue. One way to enhance communication and teamwork is to post project and progress information on the walls of dedicated 'situation rooms' in a process called *mieruka*, or visualization (Toyota Motor Corporation, 2009c: 51).

Another way Toyota tries to foster communication and teamwork is by putting employees to work in an open and flat environment, most typically a large room with no partitions known as an *obeya*. The large-room concept forces team members from diverse functional groups to gather in one open space to post and share project-related information on topics gathered from their respective areas, be it technology, production, procurement, logistics, marketing, or accounting (Toyota Motor Corporation, 2007b: 3-5). Making all project information visible in this manner allows employees to build a shared image of a project's objectives, its current status, and its future direction that serves as the baseline for the evaluation of project outcomes.

According to Yasuhiro Mishima, Executive Vice President at Toyota Motor Thailand, the information exposure can profoundly impact decision making and planning, since employees can see the impact their work has on others:

> This may sound a bit like popular psychology theory, but everyone knew well that we had a very high goal [of starting a new production facility in Thailand] and felt an imminent threat of danger. The basis of their awareness was the significant volume of information visualized [on the wall regarding production startup] and shared. When people from other sections came to the [situation room], they could see for themselves what was happening. They could also find out how their actions on issues affecting their sections were having an impact on other sections. (Osono, 2007: 9-10)

The most important tool in the entire visualization process is the information apparatus itself, known as the A3 Report. An A3 report is based on one 11- by 17-inch sized sheet of paper, where only the most essential information needed to frame and solve a problem is summarized. In its most basic form, an A3 report has five sections that closely follow the TBP problem-solving process, starting with the 1) problem definition and description, and followed by 2) problem analysis, 3) implementation plan, 4) results, and 5) future steps.[52] Once completed, A3 reports are dispersed throughout the organization and mounted on the walls of division obeyas, keeping employees apprised of a project's progress and result.

Although condensing mounds of information onto one sheet is not easy may seem like a simple process of summarization, the A3 reporting process teaches employees to be more

[52] See Figure A-11 of Appendix A for an example of the Toyota A3 Report.

effective problem solvers by forcing them to prioritize the *important* from the merely *informative*, and the *urgent* from the most *recent*.

Mike Hoseus, a former Assistant General Manager at Toyota Motor Manufacturing, Kentucky, Inc., recalled learning this lesson during his problem-solving training on a production line, when a downed piece of equipment had brought production to a sudden halt at an assembly line (Liker & Hoseus, 2007: 185). After getting the line running again fifteen minutes later, he started a root cause review alongside a group of maintenance engineers when another piece of equipment went down, stopping production once more. Just as he got ready to stop the review and investigate the new situation, his trainer intervened:

> Like super off to the rescue, I began to set off to the next emergency. My Japanese trainer literally grabbed my sleeve… and instructed me to stay [with] the maintenance and engineering team, go into the group area and do a full problem solving activity with and A3.

The trainer explained to Mike that it was acceptable for the line to stop again, but postponing finding the root cause and developing appropriate countermeasures was not. Someone else would take care of the new issue and eventually get the line running again, but it was up to him to find the root cause of the problem on the line he was already working on while it was still in his mind. Being forced to undergo an A3 under such circumstances taught Mike to stop "fire fighting" every issue and instead take the time to painstakingly solve the urgent problem before moving on to the most recent one (Ibid.: 186).

Establishing Support for TBP-driven Improvements

The eight-step TBP and information visualization of the A3 reporting process lay out the path for employees to challenge the status quo, test hypotheses, discover what works and

what does not work, and raise the bar beyond existing standards (Osono et al., 2008: 146). The quintessential elements to realize mission impossible – thinking deeply of the objective, identifying the true cause, taking measured steps, and building on both success and failure – embedded in TBP are what distinguish the process as a paradigm for problem solving.

However, there are two essential skills TBP practitioners must also master to ensure a smooth and effective process: *nemawashi* to build the support needed to realize a project, and *yokoten* to share best practices and elevate standard levels throughout the organization.

Nemawashi

According to Toyota Institute Group Manager and TBP instructor Hiroshi Watanabe, the *destiny* of the automobile industry is *consensus*. "A car has over 30,000 parts. Toyota has 250 divisions. Putting all the parts together involves so many people to work in consensus," he explained (personal communication, 2009, August 7). Getting others to enthusiastically take on and actively support a new project despite their existing workloads requires project champions to be highly persuasive and contagiously passionate. Otherwise, Watanabe warned, champions faced an uphill battle laying the groundwork of approval, or *nemawashi*, needed for changes to be carried out with the consent of all involved parties.

To effectively establish nemawashi, Toyota managers have to master what Watanabe called the "essence of persuasion" during their TBP training on improvement projects that take up to nine months to complete. This experience involves gaining six levels of approval in a process that splits nemawashi into four distinct phases (see Figure 4-3).

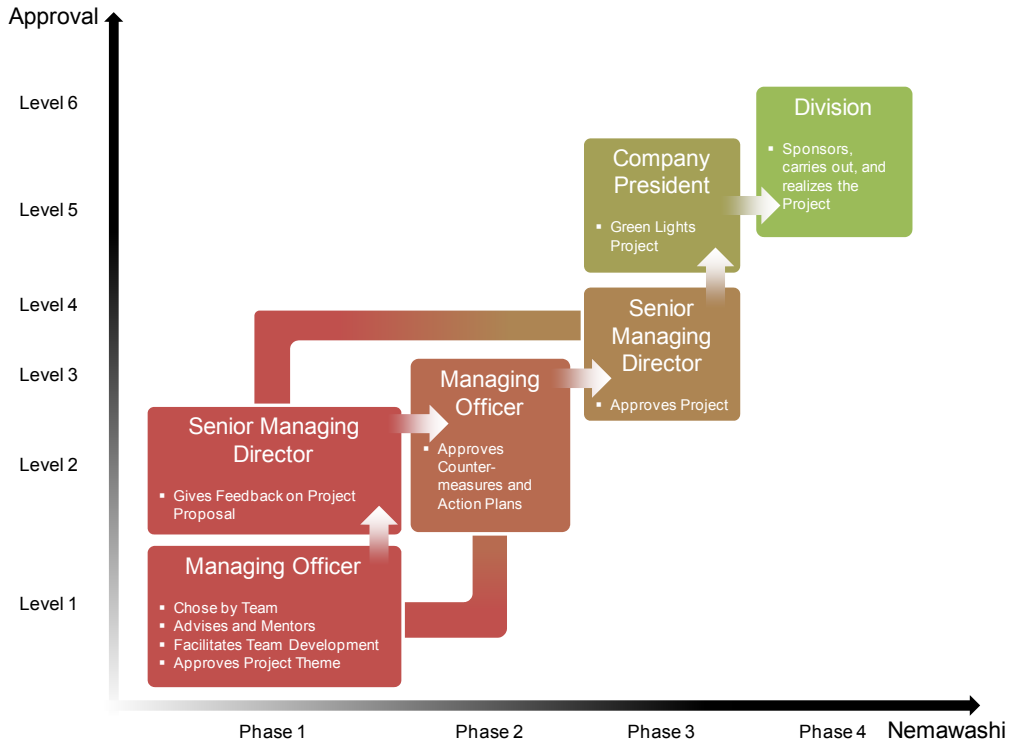


Figure 4-3. The Four Nemawashi Phases and Six Levels for Project Approval.

Note. Created by author.

The first phase is usually one week long and starts with TBP teams agreeing on a project theme, and then choosing an adviser, usually a managing officer, to serve as their mentor during the entire project. This phase concludes with a project proposal presentation, on a theme approved by team adviser to a senior managing director, who provides the team with feedback on points to consider, fix, adjust, or get back to.

In the second phase, the teams begin their improvement projects and have to contend with the logistics of maintaining communication amongst regionally disparate team members, coordinating group visits to relevant sites linked to the project improvement theme, and sharing information with potential decision makers in other divisions, all within the framework of a limited project budget. Before advancing to the next phase, teams have to win their adviser's approval for any proposed countermeasures and action plans.

This effort builds the foundation for the third phase of nemawashi – getting project approval from senior management. This starts with an approval meeting with the senior managing director who first reviewed the proposed project, and, if accepted, is followed by another approval session, this time with the company president. A presidential green light for the project starts the fourth and most important final phase of nemawashi – finding and persuading a division within the company to sponsor, carry out, and realize the project.

Yokoten

To facilitate teamwork and share best practices, employees learn to engage in *yokoten*, which encourages people to openly share individual know-how and expertise with others, and creating learning opportunities when others do the same. This is an important practice in the final step of the TBP process to raise standard levels by institutionalizing new processes.

Yokoten is short for *yokoni tenkaisuru*, which literally means "unfold or open out sideways" (Osono et al., 2008: 146). So, when a best practice (e.g. in inspection or parts logistics) created at one assembly line "unfolds" elsewhere in the organization, it pressures other plants to compare it against existing practices, implement any useful enhancements, and then create new improvements of their own, with credit given to the originator of the new best practice (OJT Solutions, 2006: 101-102). The process of practice adoption and diffusion then feeds the next round of kaizen, perpetuating the continued improvement and raising of standards in the organization.

4.3 Conclusion – The Instruments for Change Capability Booster Frameworks

This chapter looked at the instruments at General Electric and Toyota that focus employee efforts towards identifying, refining, and building support for initiatives that drive change and fuel growth.

Each company has a comprehensive array of instruments to drive change. From a procedural point-of-view, their approaches are quite similarly structured, even though the

specifics such as the instruments deployed vary, as shown in Table 4-1. For example, both approaches devote significant effort in the early phases of the change process, laying the groundwork for a project, meticulously identifying and clarifying the micro (process-specific) and macro (company-wide) objectives and purpose of a change initiative. At General Electric this includes the A+CEC steps of *Appraise* and *Calibrate* and the CAP steps of *Leading Change* and *Creating a Shared Need*. At Toyota this is covered by the first two steps of TBP of *Clarify the Problem* and *Break down the Problem*.

This homework pays dividends in the later stages of the change process, once critical issues have been broken down, fixes created, and action plans developed, to engender the organizational support needed to realize the project. Clearly outlined and widely communicated objectives that align with company goals facilitate the buy-in process from key constituents whose participation make possible the execution of action plans. Again, both companies devote significant effort to this critical phase, with General Electric using project charters in conjunction with the CAP steps of *Shaping a Vision* and *Mobilizing Commitment* to convey project objectives and build support, and Toyota leveraging the visualization of process progress (e.g. A3 reports, Obeya) and nemawashi to establish consensus approval.

Finally, once a project has been carried out and results monitored, both companies cap the process with a final step that institutionalizes improvements derived from the change initiative, incorporating it with established practices to synthesize new and improved standards that boost capability and performance in the organization. At General Electric this process of assimilation is covered by the CAP step of *Changing Systems and Structures*; at Toyota it involves the last TBP step to *Standardize Successful Processes* and the sharing of best practices through yokoten.

Table 4-1.

Instruments to Drive Change at General Electric and Toyota.

Phase of Change Process	Instruments to Drive Change	
	General Electric	Toyota
Identify & Clarify	A+CEC CAP 1 & 2 ARMI	TBP 1 & 2
Break Down & Create Options	A+CEC	TBP 4 & 5
Align Effort	CAP 3 Project Charter	TBP 3 Mieruka (Obeya) A3
Build Support	A+CEC CAP 4	Nemawashi
Execute	CECOR CAP 5	TBP 6
Monitor	CECOR CAP 6	TBP 7
Institutionalize	CAP 7	TBP 8 Yokoten

Note. Relevant steps in the A+CEC and CECOR frameworks corresponding to each phase in the change process are highlighted with an underline. Created by author.

Despite their similar approaches to change, the impact with respect to 'Moon Shot' talent and capability development varies. This final section characterizes the differences in capability accretion in each company using the capability booster framework, starting with the exhaustive and rigorous change execution process at General Electric, and followed by the relentless consensus-driven pursuit of superior standards at Toyota.

Exhaustive and Rigorous Change Execution at General Electric

The most significant aspect of the instruments to drive change at General Electric is their emphasis on enhancing project effectiveness by increasing the quality and acceptance of change initiatives (i.e. Quality of Change x Acceptance of Change = Effectiveness). From the perspective of capability accretion, this is all about lowering restraint to change among people in three ways: 1) by clarifying baseline objectives (e.g. A+CEC *Appraisal/Calibrate* and CAP *Leading Change/Creating a Shared Need*), 2) by aligning efforts and resources (e.g. CAP *Shaping a Vision* and Project Charters), and 3) by thoroughly building support (e.g. A+CEC *Create* and CAP *Mobilizing Commitment*).

However, several lingering issues could diminish the benefit from these three points (see Figure 4-4). For starters, defining clear objectives is contingent on properly aligned and prioritized stakeholder needs, which depends on difficult-to-teach judgment on the part of project champions and team members. Another issue is that aligning efforts and building support for a project relies on conflict mediation skills that could side step issues instead of resolving them as required by framework protocols such as CAP. Finally, as the frameworks continue to evolve, aversion to practice abandonment could give rise to talent flight amongst those unable or unwilling to use the latest methods and approaches.

With respect to capability development from structured change, at General Electric it is driven by rigorous process improvements, such as those derived from waste-reducing lean six sigma projects, and the thorough exploration, creation, and execution of viable options using A+CEC and CECOR. More importantly, these structural enhancements benefit from the orderly diffusion of know-how and system improvements; a process reinforced by increasing acceptance for change initiatives using CAP. However, there is a risk that employees can get sidetracked by the vast diversity of instruments at their disposal (e.g. CAP,

A+CEC, CECOR, and the support tools in each process), leading to structural rigidities in the execution of projects that lower capability development.

As a final point, the practice of identifying unmet needs and demand using tools such as Net Promoter Score can reveal exploitable opportunities that advance flexible change, However, the uncertainties and difficulties related to identifying true market demand will likely dampen such an outcome.

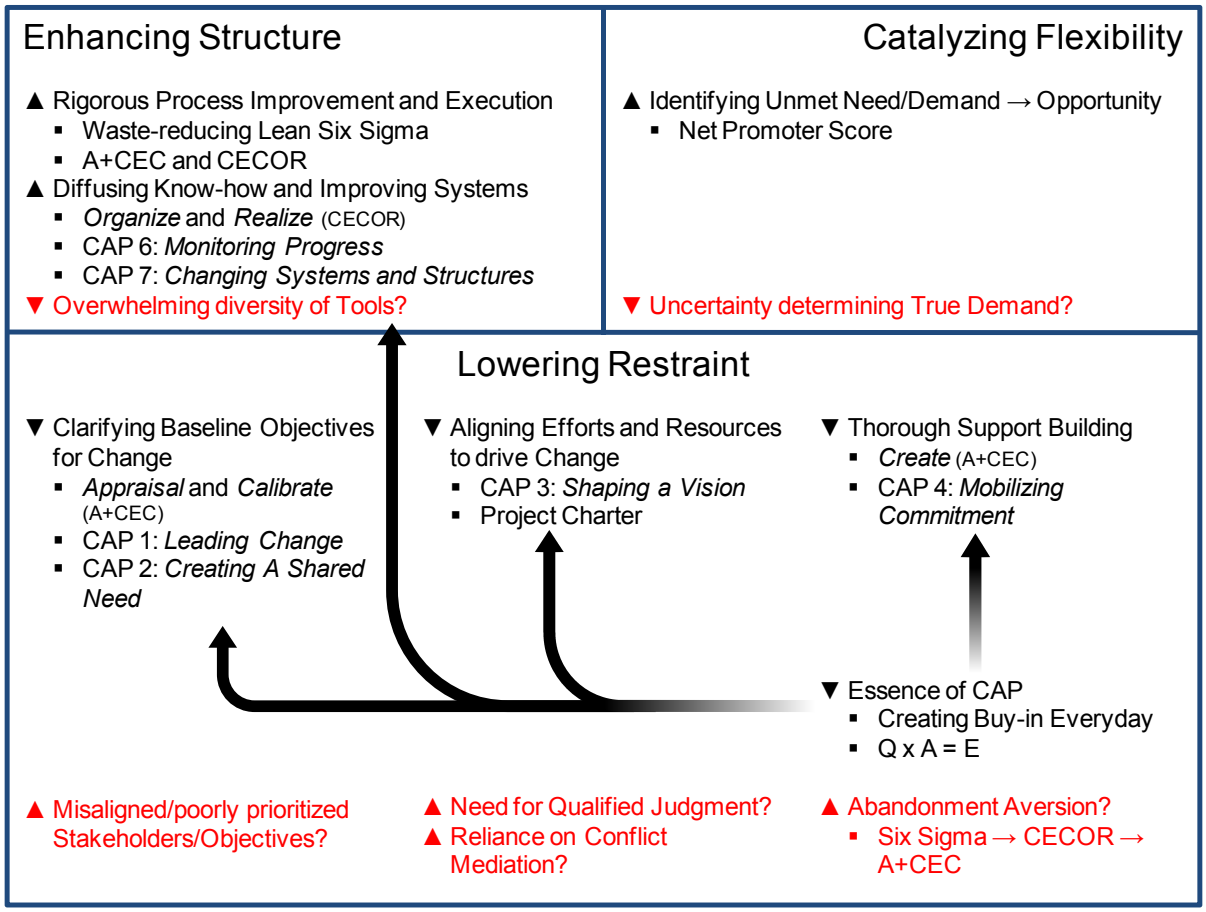


Figure 4-4. The General Electric Instruments for Change Capability Booster Framework.

Note. Created by author.

Consensus-driven Pursuit of Superior Standards at Toyota

At Toyota, the instruments that drive change all point towards the same direction – the continuous seeking of a new ideal. These could be new products, systems, or business processes that elevate existing standards (and capability) to ever higher levels. The disciplines of continuously improving processes (e.g. TPS, Kaizen, PDCA cycles) and diffusing know-how and best practices to raise standards (e.g. TBP *Standardize Successful Processes*, Yokoten) also fortify the organization's structure side. In turn, the elevated standards become the new baseline for improvement that eventually gives rise to far-reaching change that catalyzes flexibility and boosts capability.

As at General Electric, many of the instruments to drive change at Toyota are geared towards lowering restraint to change. This begins at the onset of a project, when proposed process improvement objectives and targets (i.e. the new ideal standard) get defined and aligned with the ultimate goals that drive company growth. The target objectives then guide the problem-solving effort, pairing the fact-driven bias-diminishing scrutiny of root causes (e.g. genchi genbutsu, asking "why" five times) with the dissemination (e.g. mieruka, obeya, A3 Reports) of project objectives, progress, and result to all constituents involved in the change initiative. Finally, dispersing project progress in this manner facilitates the consensus-driven process of approval (e.g. nemawashi) and sharing of new process standards (e.g. yokoten). This is especially true when project champions have taken care to involve key decision makers in the change process during its early stages.

However, lowering the restraint to change at Toyota is constrained in several ways. For example, the process of establishing clear improvement targets is prone to analysis paralysis and prioritization issues that delay decision making and problem solving. Even worse is when improvement targets fail to align with ultimate company objectives, forcing project champions to reboot the entire problem-solving process from square one. Another

issue is the rise of context-specific expertise in TPS and TBP methodology that can lead practitioners to emphasize one TBP step over another based on their immediately-local requirements. A related issue is the localization of best practices through yokoten that gives rise to regional variations in process standards. Although such variations serve as the baselines for new standard ideals, they can also result in localized process incompatibilities that inhibit the yokoten of best practices sourced from elsewhere in the organization. The final issue that can adversely affect capability restraint at Toyota is the involved and lengthy process of approval that risks passing up the project's window of opportunity by taking up to a year to complete.

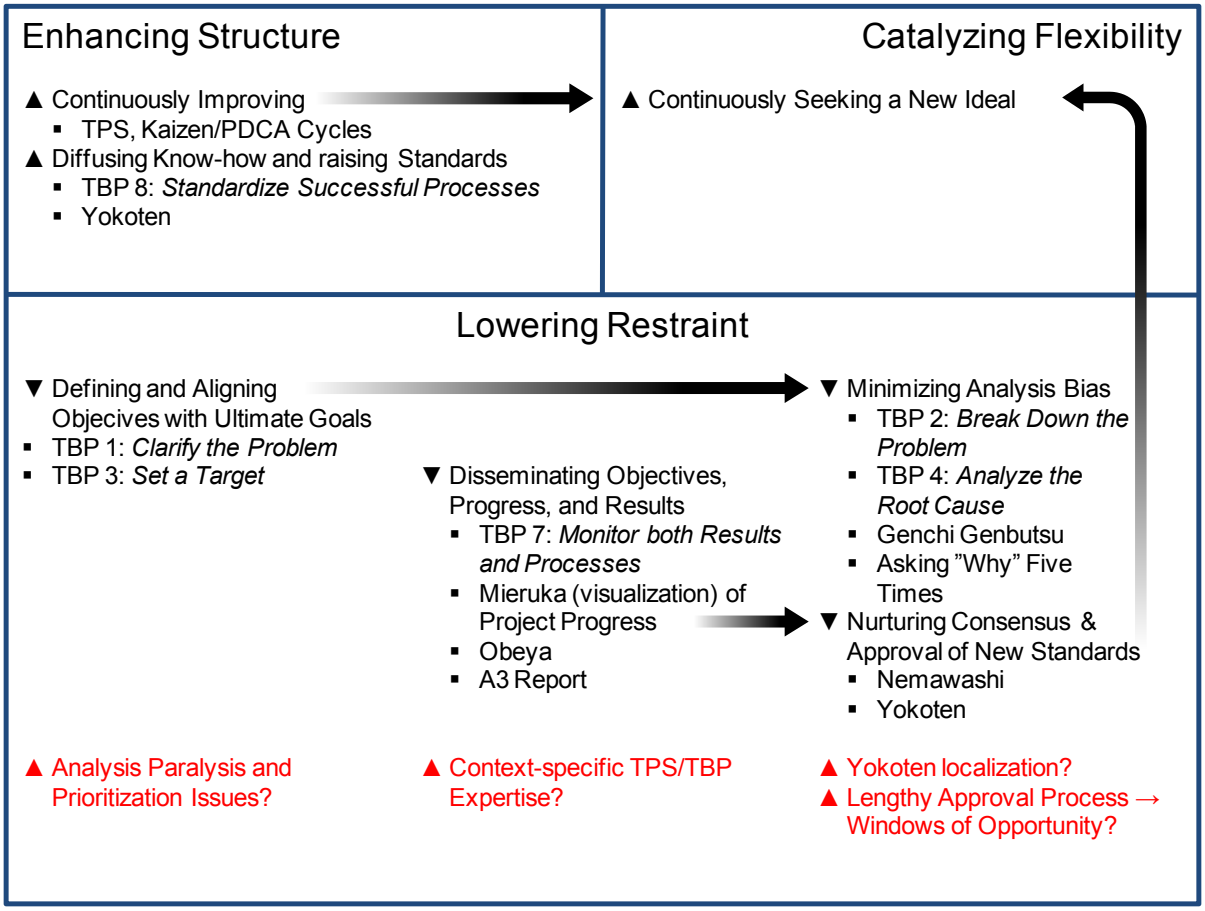
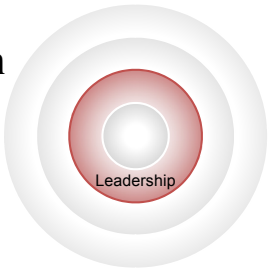


Figure 4-5. The Toyota Instruments for Change Capability Booster Framework.

Note. Created by author.

The next chapter looks at leadership General Electric and Toyota – one of the deeper layers where capability develops in an organization – and how each company drives change by cultivating leaders who observe, listen, reflect, and learn.

Chapter 5 - Leaders who Observe, Listen, and Learn



Ralph Cordiner, CEO of General Electric from 1958 to 1963, argued that the limit to company growth was management and its ability to "best-balance" the interests of stakeholders: shareholders, customers, employees, suppliers, and communities (GE Global Learning, 2009: 12; Drucker, 2004: 87). This balancing act requires managers to leave their desks and get their hands dirty – frequent the front lines, mingle with subordinates, interact with suppliers, listen to customers, and fix things, again and again. To own the issues, managers must face those who know the issues, be they angry suppliers, disgruntled workers on the factory floor, disillusioned staff who see revenues spiraling down, or most critically, unhappy customers whose soured opinion can make or break a business. And in the absence of any problems, new ones are sought out. This is the essence of the 'deep dive,' where managers spot an operational challenge and direct all their energy towards overcoming it before moving on to other challenges (Welch, 2001: 100). In other words, managers at General Electric are expected to micromanage, meddle, and sweat in the trenches (Lane, 2008, January 25). This engagement into detail, according to General Electric CEO Jeffrey Immelt (2004: 2), requires an incredible thirst for knowledge. "Learn from the work you do," he said. "From the people you admire. Learn by hurting and failing and don't take things at face value. Dig deep to discover the truth for yourself."

At Toyota, managers are seriously committed to listening to all stakeholders, and continuously have their ears to the ground. Since solving problems requires awareness of issues, employees work in cross-functional teams requiring communication that traverses departmental layers and functional reporting lines and interconnect organizational units in

myriad ways that are often geographically dispersed. But this only helps diffuse information, not gather it. To collect information and create awareness of issues like sourcing bottlenecks, product defects, shifting consumer preferences, or declining sales, Toyota sends managers to genchi genbutsu ("see things firsthand") at genba ("frontlines"). Product teams make frequent visits to customers and dealers to improve their understanding of their business. This kind of thinking is especially ingrained in top executives, who are keen to be the first ones to ask, "Have you seen it?" For example, in the summer 2008, then Toyota Executive Vice President Akio Toyoda surprised his hosts when he paid unannounced visits to dealerships in Ann Arbor, Michigan, to learn more about pickup truck recalls, getting down on his hands and knees to inspect truck undercarriages (Maynard, 2009: BU1). Like their counterparts at General Electric, Toyota managers rectify problems by experiencing issues firsthand, rolling up their sleeves, and getting their hands dirty at the muddy front lines.

This chapter looks at the unique leadership traits at General Electric and Toyota that instill a mindset of proactive scrutiny and tolerance, with issues resolved in an engaged manner allowing those involved to observe, listen, and learn from each other. This leadership mindset to promote 'moon shot' talent development in General Electric and Toyota is described in the next three sections:

- Three-way leadership
- Leadership development
- Retaining leader talent

5.1 Three-way Leadership

According to Dr. Noel Tichy, a leading authority on organizational behavior and leadership development, the imperative of a 'good' leader is a commitment to be a learner and to develop leadership judgment in others. This duality – learning to become better while

teaching others to make them better – requires leaders to have the self-confidence to teach and the humility to learn (Tichy & Bennis, 2007: 238-239). Based on this duality, leaders can be categorized into three basic types: *one-way*, *two-way*, or *three-way*.

One-way leaders are the domineering types who pioneer new directions and give orders but rarely take back or learn from others; a unidirectional approach that often fails to engage, foster ownerships of issues, or align the interest of others (Randall, 2003: 34). *Two-way* leaders are engagers who lead by example and listen to others, passively exploiting external inputs to influence decision-making and align efforts. Both of these contrast with the *three-way* leaders, the inspiring individuals who set the stage for interactive learning, actively observing their environment and soliciting opinions from coworkers in a give-and-take manner that allows pupil to become teacher and vice versa.

Based on this categorization, the leadership traits that General Electric and Toyota cultivates in employees can be considered unique paradigms of *three-way* leadership, as described in the next two sections.

The General Electric Leadership Growth Traits

An internal company review of 146 executives conducted from 2005 to 2006 identified five distinguishing traits – the "must haves" of the new generation of leadership to drive innovation and fuel growth at General Electric (Yagi Yosuke, personal communication, 2009, March 25). Known as the *Leadership Growth Traits*, the five leadership "must haves" listed below were created to ensure that the company remained customer-centric, externally-focused, and learning-driven (General Electric, 2009c):

- **External focus**. Defining success from the customer's perspective; is aware of industry trends and market changes.
- **Clear thinker**. Decisively distills complex problems into simple and actionable strategies; clearly conveys objectives and priorities.

- **Imagination**. Boldly seeks new and creative ways; willing to take risks; open to change.
- **Inclusiveness**. Involves, engages, and inspires others to higher levels of performance; team player; respects and recognizes the contribution of others.
- **Expertise**. Builds acumen and know-how through hands-on experience; keeps in step by continuously learning and acquiring new skills.

According to CEO Immelt, one ultimate objective of the leadership growth traits is to develop other leaders (Prokesch, 2009: 105). The other is to drive change (Tichy & Bennis, 2007: 128). He clarified this point before a group of MBA students at Michigan State University. "Great leaders," he told the group, "drive change… [General Electric has] enough institutional momentum that if [it] were going to stay the same, you sure don't need me. Leaders drive change… That is [their] job."

Learning-based Leadership Qualities at Toyota

Ask Toyota executives what their single-most important take away was during their Toyota Way training, and their responses invariably highlight how they transformed from being accomplished problem solvers into teachers and mentors capable creating an environment that instills process improvement acumen and Toyota values in others (Spear, 2004: 2; Liker & Hoseus, 2007: 542). As teachers, they instill problem-solving skills through continuous experimentation. As mentors, they share anecdotes and personal experiences that impart Toyota values to others. Preacher managers, those who only communicate in one direction and do not listen to others, rarely advance in the company (Yukitoshi Funo, personal communication, 2006, July 28). The same holds true for managers who do not collaborate in team efforts or acknowledge the contributions of others.

The six aspects that typify this type of leadership at Toyota are:

- **Open mindedness**. Willingly listens and learns from others; thinks independently and from multiple perspectives with a long-term view.
- **Problem solver**. Is enthusiastic about making constant improvements; goes to the source (genba) to grasp the essence of an issue; translates ideas into action.
- **Team player**. Comfortably works with teams; allows others to develop, grow, and flourish.
- **Action oriented**. Takes quick actions to solve problems; is never satisfied with the status quo; is in constant search of a better way.
- **Teacher and Mentor**. Cultivates a learning environment that stimulates creative thinking in others; instills company values.
- **Humble and Modest**. Keeps learning and improving; acknowledges that personal progress depends on the efforts of others.

Toyota's former president, Katsuaki Watanabe pointed out that maintaining diverse perspectives and an action-orientation at the front line in the face of problem-solving uncertainty means standing your ground to avoid the dead-pan solutions that lead to no change. This requires an open and trusting environment where "concerns and problems are not hidden and constructive discussion take place routinely" (personal communication, 2007, October 10). Otherwise, he said, "you may end up with a compromise. If that happens, there is no speed, no progress … [and] solutions barely scratch the surface."

5.2 Leadership Development

Cultivating three-way leaders who inspire interactive learning amongst coworkers is by no means easy. It requires intense commitment and frank engagement between instructors and pupils as they join forces to tackle the professional and personal issues that promote

mutual learning and growth. Roger Enrico, the former Chairman and CEO of PepsiCo who pioneered the company's executive leadership program, maintained that effective leader development required six conditions: 1) having a teachable perspective that creates change and grows the business; 2) committing one-half to one-third of all available leader time to the development of a select group of individuals; 3) being a vulnerable mentor who is open to new ideas and admits mistakes; 4) learn using real business projects with real impact; 5) blending the soft (people issues) and the hard (business issues); 6) energizing trainees in an engaging process that encourages risk taking and experiential learning (Tichy & DeRose, 1995: 1). These six conditions represent the base ingredients to cultivate three-way leadership.

The next two sections expand on the tiered leadership development programs at General Electric and Toyota introduced in Chapter 3 on Talent Management Infrastructures, and how these blend the six conditions for effective leader development with company-specific leader traits into a recipe to cultivate three-way leadership in each firm.

General Electric Leader Development Programs

In interviews with the *Nikkei Business* and *Harvard Business Review*, CEO Immelt highlighted three challenges the company faced to change leadership behavior (Prokesch, 2009: 104; Yamakawa, Ito, & Yamazaki, 2008: 46). The first challenge was convincing people to stay four to five years longer in their jobs to fully carry out projects that fuel growth. The second challenge was decisiveness; overcoming the myriad of maybes that stall progress and change. The third challenge was instilling the passion, energy, and enthusiasm to learn new ideas and discover what will happen next.

The tiered structure of leadership training at General Electric that emphasizes individual self-discovery, personal development, and team-building is one attempt to address these challenges. Three specific programs are of special interest: the Leadership, Innovation, and Growth (LIG) program that emphasizes long-term project engagement, the Experienced

Commercial Leadership Program (ECLP) to instill business strategy and execution acumen, and the Global Leadership Course (GLC) focusing on team management and facilitation.

Leadership, Innovation, and Growth

The Leadership, Innovation, and Growth program is a series of 4-day sessions that bring together executives to explore market-based and customer-focused strategies that lead to long-term organizational growth. The aim of the program is straightforward: to embed growth into the DNA of the company (General Electric 2007: 8). It does this by placing management teams as the agents of change, knitting into their daily activities the creative mindset that drives innovation in every aspect of their business or division.

Prior to attending the seminar, LIG participants prepare by updating their three-year goals and objectives and their performance is assessed using the 9-block (Yagi Yosuke, personal communication, 2009, March 25). They are then split into intact business leadership teams representing their respective business units or divisions to discuss project and industry related-issues affecting future strategy, innovation, and growth.

The LIG seminars combine classroom instruction, interactive group work, and internal and external expert speaker sessions on issues that directly relate to the company's leadership growth traits. For example, the 2008 LIG curriculum covered *clear thinking* strategies on day one, leading innovation through courageous *imagination* on day two, customer segmentation as an *external focus* on day three, and communication as a tool for *inclusiveness* on day four (GE Global Learning, 2009: 17). The teams also discussed topics directly tied to human resource management, such as how to assess employee growth traits using the 9-block and how impact this influenced sales management and compensation structures.

The most important component of the LIG seminars are the daily team breakout sessions where the nitty-gritty details of specific projects and issues are hashed out and teams

put together the detailed implementation plans that will drive growth in their respective business or division five to 10 years down the line (Prokesch, 2009: 105). This is also where teams have to identify the capability gaps restraining business development, list the immediate steps to overcome these shortcomings, and craft an energizing vision statement that will align and inspire subordinates to rally in support of their growth initiative.

The LIG program culminates with one final team exercise – the "Report Out" – an intensive no-stone-left-unturned Q&A before the company CEO where teams present, receive feedback, and revise their detailed implementation plans (GE Global Learning, 2009: 32-33). Hideki Naoi, a Manager at GE Yokogawa Medical Systems and a lean six sigma instructor, noted the intense focus on detail during the report out session to flesh out and validate every aspect of the implementation plan: "I learned the importance of building extremely precise future plans and focusing on data and voices of customers [with Net Promoter Scores], not on my gut reactions or experiences" (Yamakawa, Ito, & Yamazaki, 2008: 27). The point of this exercise is to get business teams comfortable making clear and informed decisions in the face of market and industry uncertainty.

One added benefit of the LIG seminars is that it allows successor candidates identified through Session C reviews to take charge while their direct supervisors are away taking part in the executive training session (Ibid.). So, as LIG participants are molded into their role as the pioneers of future innovation and growth, their successors build up the experience and confidence that reinforces their future promotion.

Experienced Commercial Leadership Program

The Experienced Commercial Leadership Program is a two-year commercial skills and leadership development program run by General Electric's headquarters to prepare high-potential Lead Professional Band (LBP) managers with proven professional track records for leadership roles in sales and marketing. Enrolment to the program varies from 120 to 150

candidates per year, split into two groups that begin six months apart (Peilung Yang, personal communication, 2009, March 15). Participants are a mix of qualified industry experts, internal professional candidates, and externally hired MBA students with over four years work experience (General Electric, 2009d).

The aim of ECLP is to instill business strategy and execution acumen. This is done by blending four rotating job assignments in the sales and marketing functions of a General Electric business with two-week sessions of intensive group-training at Crotonville between assignments. Although training content varies by individual need, typical topics include hard skills in tools such as industry simulations, the A+CEC strategy execution framework, the CECOR multi-level planning model, and the business transformation Change Acceleration Process. Training also covers soft skills in negotiation, team-building, and effective sales presentations (Tatsuhito Sugaoi, personal communication, 2009, May 28).

The ECLP learning curve, especially with regards to the leadership growth traits, is steepest during the rotating job assignments, each one with its own objectives, work setting, and supervision support. GE Money Product Manager and ECLP graduate Tatsuhito Sugaoi observed that although his evaluations varied from one assignment to another – ECLP evaluations do not look at goals and objectives performance per se – they all consistently emphasized the leadership growth traits (personal communication, 2009, May 28). This realization strongly influenced his work ethic. “After becoming aware of what was being evaluated,” he said, “I tried to perform based on the traits.” This included being inclusive, clear thinking, imagination, gaining expertise, and maintaining an external focus. Two concrete goals he set for himself included developing his communication and presentation skills (for *clear thinking* and *inclusiveness*) and getting comfortable making decisions using strategic tools such as the A+CEC framework and CAP in his daily projects (stronger *external focus* and *expertise*).

The structure of ECLP instruction also fosters a strong social cohesion among participants who get ample opportunities to reconnect and share experiences during their Crotonville training sessions. The staggered class starts allow *sempai* (more experienced) members to tutor the novice *kohai* (less experienced) participants, with volunteer groups often formed to provide specialist training. In 2006, one such group set out to create best-practices in sales and marketing by amalgamating existing know-how into implementable tools similar to those of the A+CEC framework. Another group is the GE Women's Network that arranges experienced GE Commercial female executives to serve as guest speakers and ECLP mentors (Peilung Yang, personal communication, 2009, March 15).

Global Leadership Course

The two-week Global Leadership Course (GLC) is an intensive action-learning session to develop the interpersonal and conflict resolution skills needed to lead team-based initiatives. The principal aim of the course is to get trainees (non-US based managers from diverse business units, divisions, and functions) to reevaluate their way of thinking concerning teamwork and collaboration as they toil in groups developing solutions to timely business issues. This is accomplished by creating an "uncomfortable" and "alien" environment that forces trainees out of their comfort zones, creates tension, and stretches emotional limits (Ricky Taguchi, personal communication, 2009, April 27).

A typical GLC program has two parts, each one-week long. The first part of the 2009 summer session took place in Shanghai and kicked off with a business simulation and group interaction session to familiarize trainees with their strengths and development needs based on their most recent performance evaluations. The next day, trainees were put into coached-coach-observer triads to reflect on their Myers-Briggs Type Indicator personality assessments and business simulation results. The rest of the week was filled with guest speaker sessions on various business topics such as globalization and economic trends. The first week

culminated with trainees divided into the 12-member teams that would tackle a technology-driven business strategy theme, but the actual topic was not revealed.

The second part of the GLC took place in Tokyo and focused on the completion of the group project. On the first day, after an overview session about General Electric by the company chairman, the project topic was revealed – a synergistic set of proposals on open technology innovation. The teams then elected leaders and external project champions and, apart from a guest speaker session the next day, were left to their own devices assigning roles, dividing tasks, and collecting data. Their goal was to create a business-driven project solution that seamlessly fit with those of the other teams. Their only lifeline was the project champion, who could help arrange interviews. This was the most difficult stage of the GLC – a tense-filled three-day period during which egos, selfishness, and passive/quite tendencies ferment interpersonal clashes that drive down team performance. The teams then practiced dry-run presentations before corporate auditor staff (internal specialists in presentations and proposal evaluations) before making their final 15-minute report outs to senior executives the next day.

Course facilitators play an important part maintaining group cohesion and a constructive learning environment during this difficult phase. To keep teams from derailing, facilitators pay close attention to the body language and posture of trainees, particularly their level of interaction and any reticent behavior. The quantity and quality of contribution is of special note, as it depends on the phase of learning during group discussions: while brainstorming quantity is important, but during decision-making and execution quality is vital (Ibid.). For example, during one of the GLC guest speaker sessions, several trainees showed disinterest and checked e-mail. The course facilitator halted the session, and told the entire class, “I don’t want to scare you, but your actions affect others. You can go back to your jobs if you are too busy. I don’t want to waste your time.” This quieted the class. The facilitator then asked, “Are you going to focus on the course?” Their reply was a unanimous “Yes, sir!”

By keeping tabs on such behavior, course facilitators can steer team learning in the right direction, using intra-team conflict as an opportunity to reflect on the dynamics of group behavior (e.g. the Forming-Storming-Norming-Performing stages of teamwork development) and teach trainees the nuances of group dynamics that adversely affect team performance.[53]

The Toyota Approach to Leader Development

Asked to describe his expectations of new hires in an interview just prior to becoming company president, Akio Toyoda highlighted several behavior qualities: "To *learn* your jobs with *propriety* and with *humility* toward[s] your seniors … to *stoically* apply yourselves to your work… [and to] *tolerate* mistakes made in the process of *growing up* and in *tackling challenges*" (Toyota Motor Corporation, 2009d: 9; emphasis added by author).

Not surprisingly, this response reflects the leadership qualities at Toyota, such as being a humble and modest problem solver who learns by doing. More importantly, Toyoda's reply also reveals how company leaders develop people by transforming mistakes committed in the pursuit of challenging goals into learning opportunities; an interactive learning approach that mirrors the mutual-learning principle of three-way leadership. This development-focused style is referred to in *The Toyota Way 2001* as the "thoughtful" leadership that energizes and invigorates others by assigning them difficult yet realistic objectives that instill a sense of accomplishment and accountability (Toyota Motor Corporation, 2001: 12).

Thoughtful leadership is similar to three-way leadership in that it aims to nurture others through delegation and learning by doing, holding them accountable for their actions yet taking responsibility for their activities. This requires confidence on the part of the leader

[53] The Forming-Storming-Norming-Performing model, as proposed by Bruce Tuckmann (1965: 384-385), asserts that teams go through four phases as they face and tackle problems: 1) *forming,* members meet and agree on goals and tasks, 2) *storming*, members propose and confront each other's ideas and perspectives, 3) *norming*, members adjust their behavior to conform with that of the team, and 4) *performing*, members become interdependent and function as a single unit.

in the ability of others to find solutions, and motivation on the part of the subordinates to learn and grow on their own. The next six sections expand on the six qualities of leadership at Toyota – open mindedness; problem solver; team player; action oriented; teacher and mentor; humble and modest – and present diverse examples of approaches that cultivate "thoughtful" three-way leadership at Toyota.

Open Mindedness to Listen and to Learn

Toyota managers seldom reach senior positions without acquiring the skill of listening intently to what others have to say and keeping an open mind to recognize their opinions and views as springboards for finding a better way. This skill combines the principles of continuous improvement (kaizen) and seeing things firsthand (genchi genbutsu) at the frontlines (genba) with the value of respect for people (described in Chapter 6). "However visionary the people at the top may be," explained Executive Vice President Yukitoshi Funo, "it is the people at the bottom who have the actual information on what can and cannot be done" (personal communication, 2006, August 21). Vice President and Global Knowledge Center head John Kramer was more succinct: "It's shortsighted to think that only senior people know the answers" (personal communication, 2006, August 9).

One example of how keeping an open mind can springboard finding a better way comes from the line-side experience of Assembly Manager Mike Daprile, an ex-General Motors production manager. Daprile questioned his plant coordinator why there was no key fabrication facility near the end of the production lines (as at General Motors) to curtail the problem of missing keys delaying production once a car was finished (Liker & Hoseus, 2007: 141). The coordinator's reply opened Daprile's eyes to the narrow scope of his problem solving and the utility of learning at the frontline: "Why would keys be missing? Spend your time finding why they are lost or taken, and fix that, instead of spending time and money making keys."

Being open minded and listening to others does require employees to have the freedom to make decisions on their own and not just blindly follow the orders coming from superiors. Doing otherwise compromises problem solving at the frontlines. Toyota Institute Group Manager Naomi Ishii explained the need for this seemingly contrarian attitude in the process of developing the right decision:

> When an idea comes down from the top, the folks at the bottom might say, "That can't be right. Let's try this instead." This is repeated over and over again until a final decision is made about what to do. Then we adopt that plan for a year, and the process keeps bouncing around like this as it moves forward. (personal communication, 2006, November 1)

A Risk-taking Problem Solver

Learning from mistakes requires an appetite for risk taking, a tolerance of failure, and the persistence to keep trying – three essential traits for effective problem solving. Several phrases at Toyota epitomize this appetite and tolerance towards risk, such as the oft-repeated "if you are 60 percent sure, take action" and "before you say you can't do something, try it" (Toyota Motor Corporation, 2001: 9).

Taking risks expands the horizon of possibilities, as Mario Dávila, President of Toyota de Puerto Rico, put it, "Take a risk … when you live on the edge you see more things" (Global Knowledge Center, 2005: 9). But being on the edge also means that things can and do go wrong. This is where tolerating failure comes into play. At Toyota, failure is considered an important byproduct from the pursuit of solving problems every day – an opportunity to reflect and learn from past experience.

Instilling an appetite for risk and the persistence to keep trying in the face of failure is not easy, especially when people tend to avoid risk in their daily tasks, or do not openly own

up to their mistakes. The only way to overcome these tendencies is by accumulating experience by taking risks, making mistakes, and learning lessons. The capstone projects of the Executive and Leadership Development Programs at the Toyota Institute were revised in 2009 to accelerate this kind of experience building in management. A more compressed timeframe not only allowed countermeasure outcomes to be monitored within the program term, it also forced project teams to be quick at making decisions despite lacking the data to fully clarify potential solutions (Toyota Institute, 2009a: 1-2).

This kind of experience – with tight deadlines on projects that create real business impact – instills tolerance of risk and of failure. Akio Toyoda remarked how his training on risky projects, some successful and some not, all contributed to his development:

> [If a project] failed, the failure itself would be a huge learning opportunity. That is to say, while Toyota is often perceived as a success story, we have also had numerous failures. We have used these experiences as learning tools for our people. That is how I was trained. (Osono, 2007: 11)

Growing as a Team Player

Employees at Toyota are taught to regard their work as supporting the efforts of others so together they can achieve a greater result. To instill this team-player mindset, leadership training in TPS and TBP problem-solving skills at the production centers and at the Toyota Institute emphasize group projects, with participants from different subsidiaries placed into mixed teams to expose them to alternative opinions and perspectives (Hiroshi Watanabe, personal communication, 2009, August 7). This group-over-individual view mirrors the concept of servant leadership – where people achieve results for their organizations by prioritizing the needs of their colleagues and those they serve, not the other way around (Greenleaf, 1977: 21-22).

Former Assistant General Manager Mike Hoseus recalled how his line-side supervisor training reinforced his role as servant leader and team player. With phrases like "if you expect your members to use the restroom during break time in order to minimize disruption when the line is running, then you use the restroom at break time and while the line is running," Hoseus' trainer taught him to regard himself as part of the same team alongside direct reports and supervisors and to not treat himself any different than the others on his team (Liker & Hoseus, 2007: 259). This perspective is the basis of collaborative teamwork at Toyota, where superiors motivate subordinates, predecessors train successors, and everyone shares know-how with one another despite their differences in role and function (Toyota Motor Corporation, 2001: 12).

Frontline Action Orientation

Delivering a quality vehicle experience is only possible when those involved in the process, from design and assembly to sales and service, actively fulfill their responsibilities collaboratively alongside others. "At Toyota we build cars, but we also build people," said President Akio Toyoda. "Every single person who supports genba [the frontline] is a leader" (Toyota Motor Corporation, 2009d: 6).

The preference for action at the frontline is described in *The Toyota Way 2001* as the taking of decisive action in order to produce results: "We seek a measured steady pace toward decision making that results in the timely action without the needless risk of haste" (Toyota Motor Corporation, 2001: 9). Toyota employees learn that making decisions and taking action at the frontline requires prioritizing process over result, with individuals fulfilling their duties to the best of their abilities. Otherwise, people will fail to develop and it will be impossible to make fair evaluations of their effort or contribution (Matsubara, 2004). The emphasis on responsible action to achieve result was espoused by company founder

Kiichiro Toyoda, who said: “Do whatever you like. Just take responsibility” (Toyota Motor Corporation, 2001: 11).

Former President Katsuaki Watanabe described the preference for action at the frontline as the persistent taking of small steps that benefit the whole: “To produce results, you must act with dogged determination, steadily, and repeatedly.” He also highlighted the importance of backing this attitude with action, and that he often frequents the frontlines to see for himself the results of the many small steps taken by others (Mizoue, 2005: 75).

Developing as a Teacher and Mentor

One of the most important roles of leaders at Toyota is as teachers of problem-solving skills and mentors who share values and develop others. This view of leader-as-teacher-and-mentor was instilled early in the company’s history by company founders with sayings such as “people are the most important asset of Toyota and the determinant of [its] rise and fall…” and “nothing gets started until we train and educate or people” (Toyota Motor Corporation, 2001: 12).

Senior Managing Director in charge of Human Resource Management Akio Matsubara (2004) described three qualities of effective Toyota teachers and mentors. First, they can clearly describe how they have developed over the years, both professionally and personally. Second, they illustrate their attitude to work and life using personal anecdotes and stories. And third, they view experience as the source of authentic wisdom and know-how.

Don Jackson, Senior Vice President of the Toyota Motor Manufacturing, Texas, Inc., recalled the difficulties he faced as an apprentice problem-solving trainer (Liker & Hoseus, 2007: 143). After one particularly difficult meeting, he asked his training coordinator why he was allowed to struggle so much. The coordinator’s response taught him how effective teachers support the development of others by not pointing out solutions:

> I can't just give you the answer. It is better to let you discover for yourself. That way is more powerful. The quickest way [between two points] is a straight line, but it is not the only way. You can zig and zag a little and still get [from one point to the other]. It is OK for you to zig and zag. It is my job [as teacher] to not let you fall off [track] …

Another lesson Jackson learned was the critical role mentors play to create an environment where people feel comfortable to learn from their mistakes. After preparing a report for a costly error he had made, Jackson feared the professional repercussions of his findings. However, then President Fujio Cho transformed an otherwise stressful situation into an intense learning event with one simple question:

> As I went to the meeting [to present the A3], there was Mr. Cho, with hands folded and a big welcoming smile on his face. His only words to me were, "What have you learned today?" What had been a big fear turned out to be a great learning experience. (Ibid.)

Jackson felt appreciative for the opportunity to explain the countermeasures undertaken to rectify his error. He also started emulating Cho's approach of asking "what have you learned?" to help others overcome mistakes committed in the course of their daily work.

Being Humble and Modest

People at Toyota are expected to continue learning throughout their careers, which requires equal measures of humility to accept personal shortcomings and modesty to acknowledge the contributions of others to achieve personal objectives. As Chairman and former President Eiji Toyoda once said, "I was influenced not only by my superiors but by

my subordinates as well." (Toyota Motor Corporation, 2001: 12). His experience is typical of others who have come up the ranks to reach senior executive positions and are generally humble about their capabilities and modest in character. "[Toyota] is not a place for a big ego," said Gary L. Convis, Managing Officer and Chairman of Toyota Motor Manufacturing, Kentucky, Inc. "If you have a big ego at Toyota, you do not make it far or fast" (Ibid.: 200).

Akio Toyoda personified humility and modesty in his April 2009 speech prior to being appointed company president. After outlining the moves the company would take, he admitted his own shortcomings and need for help to tackle the challenges of lower vehicle sales and production overcapacity spurred by the global financial crisis:

> I don't have all the answers [to the challenges]. That is why I will need your skills, wisdom, and support. I promise you that I will devote myself to the management of this company and I will dedicate myself to the ideals of putting the customer first and genchi genbutsu [to see things firsthand at the frontlines]. (Toyota Motor Corporation, 2009d: 6)

Job rotations play a major part to instill the modesty and humility. When managers are rotated to a new area, they are forced to do two things. First, they have to rely on the Toyota Way of managing based on PDCA and problem solving to get projects moving. And second, they have to defer to and depend on their subordinates who possess the know-how and information needed to complete ongoing projects (Like & Hoseus, 2007: 142). This experience builds leadership and problem-solving acumen to create nurturing environments where managers and subordinates learn from each other.

5.3 Retaining Leader Talent

The single most significant loss of expertise and know-how in any firm is the flight of experienced managers, especially those groomed over years for leadership roles in the

organization. Generally, people leave companies to achieve a higher aspiration, from the pursuit of professional goals (e.g. more challenging opportunities, to switch industries, increase remuneration) to the fulfillment of personal ambitions (e.g. realize a life-long dream, change lifestyles, get closer to family and friends). However, it is not uncommon for employees to leave because of a stressful, uninspiring, or unrewarding work environment. The challenge is to identify and mitigate the negative sources of employee flight and retain leader talent in the organization as long as possible. General Electric and Toyota are no exception.

Retention Initiatives at General Electric

Although General Electric does not disclose figures on management-level turnover, it is possible to use the retention rate of managers in multi-year training programs as a proxy. For example, the retention rate among ECLP-trained managers in Japan is about 75 percent two years after graduating from the program. This figure drops to about 30 percent after three years (Peilung Yang, personal communication, 2009, March 15). The most cited reasons for their departure, apart from getting a better job outside of General Electric, included feeling unattached or unfamiliar with the company, a lack of satisfactory positions after completing the program, and a difficult or unfulfilling experience during the six-month rotations. This last reason was typified by insufficient time to deliver satisfactory results, feeling as an outsider during assignments, and trivial project responsibility or involvement (Ibid.).

To counter management flight and retain leader talent, the training programs at General Electric have been significantly revamped. From May to July of 2009, almost 40 percent of Cornerstone Leadership course content was changed to tackle employee retention issues (Ricky Taguchi, personal communication, 2009, July 17). For example, the NMDC for managers with direct reports now includes a module on the corporate perspective of General Electric – from what industries the company does business and how big each business is to

where they operate and how they are changing. “If you don’t know General Electric well, how can you be proud of the company? How can you lead your team?” asked Crotonville Leadership Japan Manager Ricky Taguchi. These changes allow managers to see the big picture with respect to the global conglomerate they work for, and how the locality of their “tree” (or business they belong to) fits in the vast expanse of the “forest” (the firm).

Another major change in NMDC was the shift in instruction from everyone-as-leader to everyone-as-managers-who-lead. According to Taguchi, exceeding expectations requires managers to be leaders, but not on leaders being managers:

> We expect all employees to be leaders. If you have a certain level of authority and achieve your expected level of G&Os [goals and objectives] performance, no one will praise or recognize you as a leader… But fulfilling stretch goals of 20 percent, 40 percent, or 60 percent requires influencing others to achieve beyond expectation. This is what leadership can do.

Taguchi’s point is that managers should not just choose the right things to do; they must also be able to execute them. NMDC trainees now learn that their two responsibilities are to 1) develop successors and 2) influence peers to achieve growth objectives one, three, and five years down the line. The purpose of the training shift from everyone-as-leader to everyone-as-managers-who-lead is to increase management engagement in long-term projects and motivate them to stay longer to witness the fruits of their labor.

Management Retention at Toyota

As Toyota expanded in the United States, turnover in its middle-management ranks peaked at almost 8 percent during 2005 and 2006, significantly higher than the company’s voluntary turnover average of about 2 percent (Mediacorp Canada Inc., 2009; Chappell, 2007). This represented a significant loss of investment in training, with many ex-employees

citing excessive overtime, poor communication, and sub-optimal project coordination in the organization as reasons for their departure. Although the voluntary turnover rates are lower than the current industry average of 10 percent, each resignation represents a loss to talent and capability in an organization where capability is nurtured over many years through hands-on on-the-job training (U.S. Department of Labor, 2009).

To mitigate the flight of talent, Toyota began decentralizing project management away from the U.S. manufacturing subsidiary at Erlanger, Kentucky, to two new regional centers set to open in California and Texas in 2010, cutting down travel time for the managers. However, these moves have taken a back seat as the company wrestled with excess production capacity and shrinking sales due to the global financial recession sparked by the U.S. credit crisis of 2007.

Jim Lentz, President of Toyota Motor Sales U.S.A., Inc., acknowledged that maintaining workforce morale during such difficult times was a challenge. Instead of sending home employees at plants idled by a lack of production, Toyota keeps them on-site undergoing skills training to improve problem-solving at the assembly lines through work-sharing schemes that compensate for nine out of every 10 hours worked (Rowley, 2009). According to Lentz, having employees spend time improving capability was the best option in the long run: “It would have been crazy to lose people [then] rehire and retrain [them] and hope that we have a smooth ramp-up” (Linebaugh, 2008: B1).

Keeping employees on-site and engaged has two benefits: 1) it keeps morale up by keeping idle hands and minds busy through the down-time kaizen of known production-related issues that 2) lead to productivity gains once production starts again. For example, idled line workers at Toyota’s Indiana plant in the U.S. that stopped producing pickup trucks in late 2008 designed a Teflon ring to prevent paint damage that affected two to three vehicles per shift every time the drill to install an electric door switch slipped (Ibid.). These

types of initiatives also relieve the stresses of idled production by reinforcing the problem-solving and teamwork mindset among employees.

5.4 Conclusion – The Leadership Capability Booster Frameworks

This chapter covered the leadership traits and qualities at General Electric and Toyota, and how both companies cultivate three-way leaders who actively listen to and engage others in an interactive manner that inspires mutual learning and growth.

Compared side-by-side, the characteristics of ideal leadership at each company are quite similar, as shown in Table 5-1. Both firms strive to develop leaders who have clarity of perspective (e.g. customer need) and environmentally aware (i.e. cognizant of business trends, short- and long-term objectives, needs of stakeholders), able to distill complex problems into prioritized and actionable solutions. They willingly embrace change, are energized by the pursuit of a better way, and constantly seek out new knowledge that builds acumen. The leaders are also cognizant of personal shortcomings and that their own success depends on the contributing efforts of others regardless of rank or function. Consequently, they collaboratively nurture successors so both sides can learn from each other and together reach higher levels of performance.

Although the leadership characteristics are similar, their impact on capability accretion based on the capability booster framework is different, as described in the next two sections on engagement-driven growth leadership at General Electric and development-focused leadership at Toyota.

Table 5-1.

Leadership Characteristics at General Electric and Toyota.

Characteristic	Equivalent Trait or Quality	
	General Electric	Toyota
Clarity of Perspective and Awareness	External Focus	Open Mindedness
Distills Complexity into Prioritized Action	Clear Thinker	Problem Solver
Seeks a Better Way, Embraces Change	Imagination	Action Oriented
Always Learning	Expertise	Humble and Modest
Collaboratively Nurtures Successors	Inclusiveness	Team Player Teacher and Mentor
Recognizes Shortcomings and Contributions by Others	Inclusiveness	Humble and Modest

Note. Created by author.

Engagement-driven Growth Leadership at General Electric

The ideal leadership at General Electric builds capability in the organization in two ways: 1) by surmounting the uncertainty that delays effective decision-making and strategy execution and 2) by instilling commitment, passion, and enthusiasm for learning in others, energizing them to stay on board and carry out projects to the end.

Overcoming uncertainty and indecision improves leaders' strategy execution and avoids missing windows-of-opportunity for projects, over time enhancing structured change

and capability accretion. Decision and execution acumen is drilled into managers through intense project management training (e.g. ECLP) and review sessions (e.g. LIG Report Outs) that instill company growth traits of distilling complexity into actionable strategies (i.e. *Clear Thinking*) and taking risks and being open to change (i.e. *Imagination*). The combination of actionable strategy and risk taking also has the potential to eventually engender flexible change as leaders pursue challenging goals that transcend existing structural limits. However, one constraint to sustain change is the substantial loss of talent due to management turnover (as high as 70 percent after five years based on ECLP retention rates). Compensating for this loss drains management resources and slows capability development in the middle ranks of the organization (see Figure 5-1).

Instructing leaders in ways to build in others the passion, energy, and enthusiasm to learn and grow lowers the restraint to capability accretion. This includes crafting project statements that align employee effort (e.g. LIG Vision Statements), handling team and group dynamics (e.g. GLC facilitation skills), and participating in specialist training (e.g. ECLP women's networks). Other leader-based mechanisms that decrease capability restraint include values-based evaluations that encourage conformance with leadership growth traits (e.g. ECLP rotation evaluations) and instruction emphasizing successor development and influence building to achieve long-term growth (e.g. managers-who-lead themed NMDC training). These initiatives inspire managers to learn from others in an engaged, inspiring, and respectful manner (i.e. the growth traits of *Expertise* and *Inclusiveness*).

Finally, to mitigate the detrimental impact of management turnover on leader commitment and capability restraint, the company tries to increase the engagement level of leaders on growth-driving projects that take time to yield result in several ways. These include deeper social cohesion through long-term team-based LIG projects, ECLP-inspired social groups and networks, and familiarizing employees with the conglomerate's corporate

side and their role in it. The aim of these efforts is to instill an external perspective and awareness of business trends (i.e. the growth trait of *External Focus*) and deepen employee commitment – and prolong their tenures – to carry out projects that take time to yield results.

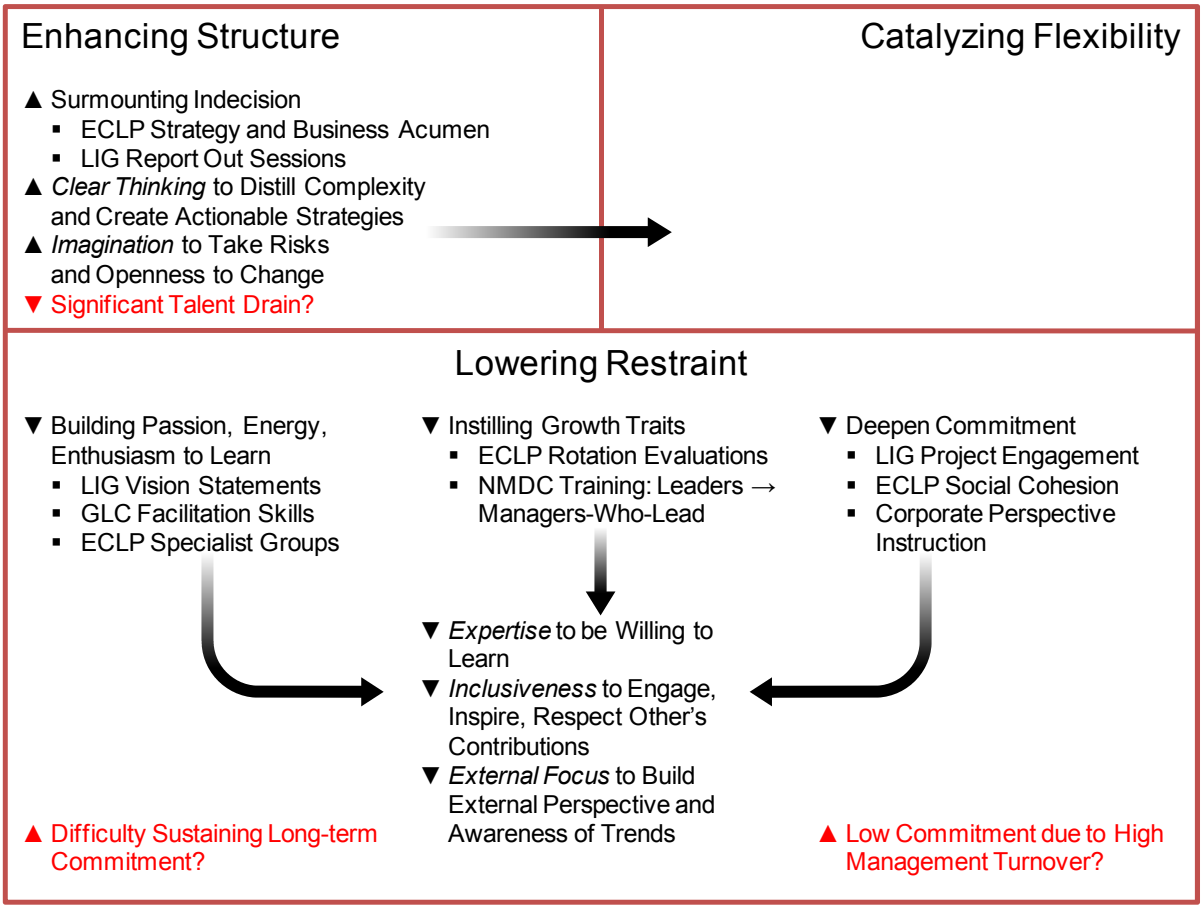


Figure 5-1. The General Electric Leadership Capability Booster Framework.

Note. Created by author.

Development-focused Leadership at Toyota

Leadership at Toyota centers on the relentless pursuit of solutions, of openness and trust, and of talent. Listening to, and learning from, alternative viewpoints directly at the frontlines serves as the springboard for problem-solving solutions. The orientation to solve problems at their source drives structured change and capability development; a process made

stronger by the habits of thinking from varied and long-term perspectives (i.e. *Open Mindedness*) and of constantly searching for a better way (i.e. *Action Oriented*). An open-minded action-orientated leadership also sets the stage for the pioneering of enterprising solutions that transcend the limits of existing organizational structure and generate flexible change.

Listening, learning, and solving problems at the frontlines benefits from an open and trusting work environment that supports unfettered decision making, an appetite for risk taking, and the tolerance of inevitable failures that are part and parcel of the problem-solving process. Leaders who can create this kind of supportive and tolerant atmosphere will diminish restraint to capability-imparting change by encouraging people to actively translate ideas into action (i.e. being a *Problem Solver*).

Another significant way that Toyota leadership diminishes the restraint to change is by interactively developing subordinate talent. Leaders serve as advisers who guide and stimulate creating thinking, using realistic objectives and delegation to foster accomplishment and accountability, in a nurturing environment where experience is viewed as the true source of know-how, failures are transformed into learning opportunities, and everyone learns from each other. This requires humility and modesty on the part of leaders, who must acknowledge personal shortcomings, capability limits, and development needs to enable mutual learning and growth alongside their subordinates (i.e. the traits of *Team Player*, *Teacher and Mentor*, and *Humble and Modest*) (see Figure 5-2).

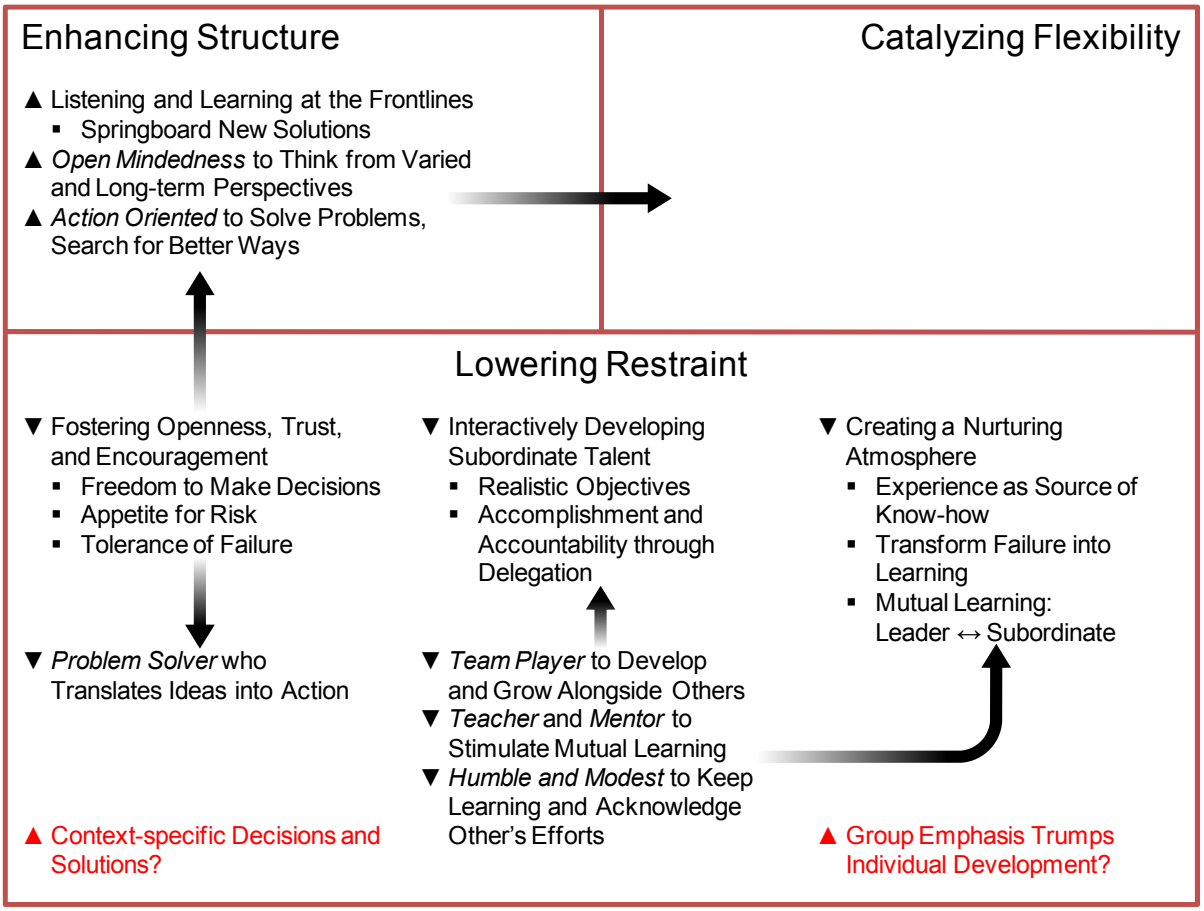


Figure 5-2. The Toyota Leadership Capability Booster Framework.

Note. Created by author.

There are two potential shortcomings to the leader-driven talent development process at Toyota. The first is that the freedom to make decisions and take initiatives within the confines of a specific context, such as a regional subsidiary or plant, could advance the use of locally rigid standards that are of marginal value or incompatible elsewhere in the organization. The second shortcoming is that the tendency to train and develop people in teams takes precedence over learning based on individual need. Although a team focus is vital to the listen-and-learn-at-the-frontlines approach to problem solving that improves standards, it also restrains the development of those people whose latent talent exceeds that of fellow peers. The dilemma is that by expecting leaders to be humble and modest team players

could arrest their development by inadvertently compelling everyone – even those able to push beyond the performance frontier – to operate at the steadier (albeit lower) pace of the group rather than superciliously break rank and forge enterprising solutions on their own.

The next chapter looks at the deepest and innermost layer where capability develops in an organization – corporate culture – to see how specific practices at General Electric and Toyota foster a common and shared understanding of unique company values and philosophies.

Chapter 6 - Corporate Cultures tuned for Change

As a conglomerate with interests in many industries, General Electric has succeeded by unfailingly divesting stagnant businesses in favor of growth sectors, in the process changing and reinventing itself. General Electric's path is about finding a better way to continuously evolve and grow. As an auto manufacturer, Toyota is the quintessential industrial firm, but it has persevered by constantly upgrading and optimizing, in the process changing and reinventing itself. Toyota's path is also about finding a better way to continuously innovate and renew. Both firms have successfully transitioned to the post-industrial, knowledge age guided by a common goal – change.

At General Electric, operational and organizational change is both a byproduct of its business portfolio practice and intentionally driven by management. One inherent source is the company's growth-driven strategy that perpetuates its evolving mix of businesses and infuses new technologies, operational practices, and employee talent into the organization. The other source is subtler – a way of management thinking that reinvigorates corporate culture by breaking with tradition and promotes change every day. When former CEO Jack Welch prepared to hand the reigns to Jeffrey Immelt in 2001, he acknowledged that General Electric's leadership had to change direction to reach a new next level: "My successor knows that his job is not to do what I did, but to take what I did as a launch pad to whole new ideas, new things […] it is his game" (Krames, 2002: 186). Managers are expected to reinvigorate themselves by evolving beyond the preordained ways of past successes to push the performance edge and create corporate value, regardless of how well they (or the company) are doing. There is one downside to this performance-driven growth focus: those unable or

unwilling to develop and improve risk losing pace, falling behind, and becoming useless. As Welch put it during an annual meeting with his top 500 managers the year he stepped down as company CEO, "If you are the same today as you were three years ago, you're out of it. If you're not going to be a lot different this year than you were last year, you stink" (Lane, 2008: 200).

At Toyota, change is pursued through the continuous improvement of all activities, embodied in the routine practice of kaizen that is now part of the vernacular of manufacturing industries around the world. The kaizen concept traces its roots to Kiichiro Toyoda, founder of the Toyota Motor Corporation, who said, "We are working to make better products by making improvements every day" (Toyota Motor Corporation, 2001: 6). The basic premise of kaizen is to make incremental changes every day that eliminate waste, such as work in process inventory, and to increase efficiency.

Although both companies strive to change, their motivations do not necessarily mirror each others. Whereas at General Electric change derives from the pursuit of toppling value-creating performance targets, at Toyota it comes from incremental improvement today, which requires an attitude of never being satisfied with the status quo, of doing a little better every day, and of constantly experimenting. As Tony Fujita (personal communication, 2006, August 2), Toyota Motor Sales, U.S.A., Vice President and first head of Toyota's Global Knowledge Center, described it, kaizen-based change requires a shared mindset that permeates the organization: "I can't imagine Toyota being satisfied with any facts, any situation, any era, or any success […] The company always demands progress. Kaizen is not only a word; it is everything to Toyota. It's implanted."

This chapter looks closely at the principles, values, and philosophies at the center of the each company's change-driving corporate culture that boost development of 'Moon Shot' talent, beginning with the external growth- and innovation-focused values and action traits at

General Electric, and followed by the continuous improvement and team-oriented philosophies and values at Toyota.

6.1 The External Growth and Innovation Values of General Electric

During his 20-years as General Electric's CEO, Jack Welch made the case for change every day – why it was needed, where the company should be headed, and how to get there (Rothenberg, 2003: 36). The values that Welch emphasized of employees were *speed* in execution, *simplicity* to communicate in a clear, inspiring, and energizing manner, *self-confidence* to meet big challenges, *boundary-lessness* to absorb ideas from everywhere, and the four E's: *Energy* to cope with the frenetic pace of change; *Energize* the ability to excite, to galvanize the organization and inspire it to action; *Edge* the self-confidence to make tough calls with yesses and noes, and very few maybes; and *Execute* the ancient GE tradition of always delivering, never disappointing (General Electric, 2000: 5).

In 2003, just two years into his tenure as CEO after replacing Welch, Jeffrey Immelt reshaped the values around four core actions: *imagine* new ways to work for customers, people, and communities, *solve* some of the world's toughest problems, *build* a performance culture that grows markets, people, and shareholder value, and *lead* through learning, inclusiveness, and change. He also paired a set of values to each core action: *curiosity* and *passion* (to imagine), *resourcefulness* and *accountability* (to solve), *teamwork* and *commitment* (to build), and *openness* and *energy* (to lead) (General Electric, 2003: 10; 2009e).

What sets apart both sets of values is their focus. The Welch values emphasize an *internal* orientation – a 'red ocean' approach to market competition where having the largest market share determines the eventual winner – whereas the Immelt values foster an *external* focus – a 'blue ocean' approach where success depends on creating, cultivating, and

harvesting new businesses and markets.[54] Immelt changed the values after realizing how weak the company's marketing functions were, atrophied by years of following a beat-the-competition approach that often neglected the needs of customers or did not necessarily create value for them (Ricky Taguchi, personal communication, 2009, April 27).

The next sections describe the corporate culture at General Electric, which has evolved from a mindset of "never disappointing" and "making the numbers" to one driven by creativity, innovation, and growth, as characterized by the following traits (General Electric, 2000: 5):

- Places values at the center of learning
- Strives for a more humane corporate focus
- Fosters a feedback ethos to drive change and growth
- Swiftly aligns the organization into cultural sync

Places Values at the Center of Learning

The training and development programs at General Electric follow a competency model that places corporate values at the very center of leadership, administration, and business knowledge instruction and learning.[55] Training in action learning components – leadership, values, and administration (i.e. ability to read, interpret, and make decisions based on financial figures) – is the domain of Crotonville and the GE Global Learning centers, while the technology-specific business knowledge is covered by the company's distinct

[54] In their management strategy book, *Blue Ocean Strategy* (2005), W. Chan Kim and Renée Mauborgne use the term 'red ocean' as a metaphor representing any bounded existing market where companies engage in a winner-takes-all approach to business that eventually drives down prospects to generate profits, leading them to losses that bleed ink and color the ocean red. In contrast, a 'blue ocean' represents an untapped market untainted by competition, where demand has to be created rather than conquered. Because such a market does not yet exist, it is not bounded by existing rules of competition, raising the prospects for greater profits relative to existing markets.

[55] The Leadership Competency Model is shown in Figure C-1 of Appendix C.

business units. The idea is that if employees can quickly master the action learning skills, they will be better prepared to absorb and use business-specific knowledge and expertise anywhere in the company (Ricky Taguchi, personal communication, personal communication, 2009, April 27).

It was Welch, during the 1980s, who found one effective way to get managers to change and transform the company's values, the central component of the competency model, into action. This involved getting them out of the physical setting of headquarters and into an isolated training venue where they spent several nights together. Only then could they socialize, undistracted by their daily duties, and start sharing ideas (Rothenberg, 2003: 35).

However, creating let alone sustaining such a fertile learning environment are big challenges, even at Crotonville. For example, in the executive-level Management Development Course (MDC), where participants are grouped into fixed teams for three weeks, course facilitators have to deal with uneven participation levels among trainees that distort individual and group performance. As one program manager put it, typical hurdles include "how to get those from India to talk less" and "getting the Japanese to speak up" alongside others.

The Customer Centered Leadership (CCL) program, the pre-cursor to the Global Leadership Course (GLC), was revised in early 2009 by GE Global Learning in Japan and Europe to address the uneven contribution levels of participants. This involved using an independent approach to business development by grouping participants into fixed teams to tackle an issue derived from a common theme, such as open innovation (Ricky Taguchi, personal communication, personal communication, 2009, July 17). The loose parameters and vague specifics for the projects inspire teamwork and collaboration within and across teams, a stark contrast to the older CCL group projects that were based on a single detailed four-page project statement for all teams, which fostered a competitive and uncooperative

atmosphere as participants tried to upstage and outperform each other. Another reason the CCL was revised was to make it more *connected*, *scalable*, and *localized* – General Electric's definition of a global endeavor – by expanding program participation to all of General Electric's non-U.S. based managers (Ibid.).

Another way General Electric gets managers to change is by making training a source of motivation. For example, getting nominated to the MDC is usually followed by a one year response lag due to the long waiting list for the 60-student course, which is only offered eight times a year. Consequently, being selected to be a part in MDC training signals participants that they are on a promotion "fast track" and are being groomed for an executive-level promotion, which boosts morale and deepens company loyalty for recognizing their growth potential (Peilung Yang, personal communication, 2009, March 15).

The run up to an MDC is also used to boost morale by stoking the egos of participants. It begins with a pre-session call congratulating the managers on their successful acceptance to the course, and is followed by a rousing welcome speech on the first day. According to Crotonville Leadership Japan Manager Ricky Taguchi (personal communication, 2009, April 27), this welcome serves as a "brainwashing" that fires up employee excitement in anticipation of the upcoming training program. The speech usually goes as follows:

> Congratulations! Welcome to Crotonville. The reason you are here today is because of your exceptional performance and demonstrated commitment to General Electric's values. You were specifically nominated and selected to participate in this course. Not everyone gets to be a part of this select group of outstanding individuals. Congratulations!

Participants also receive a post-session call to congratulate them their successful completion of the course and provide a communication channel to gather feedback regarding

the training sessions and recommendations to improve the program. This call also serves to track individual progress development and to keep tabs on high performers that could be poached by other companies or by headhunters.

Strives for a More Humane Corporate Focus

Immelt often reminds employees and customers of the two reasons "why innovation matters" in General Electric. The first reason is that the company's heritage of invention, which can be traced back to late 1870s, when company founder Thomas Alva Edison, one of history's most prolific inventors, created the electric light bulb and the means to distribute power so people everywhere could use it (General Electric, 2009f). Of his work, Edison said that he never perfected an invention that he did not think about in terms of the service it might give to others (Ibid.). This legacy lives on, with over 45 percent of the world's current energy supplied by General Electric, and defines the company's corporate DNA of *leading* change, not *reacting* to it (Ricky Taguchi, personal communication, personal communication, 2009, April 27). The second reason why innovation matters is that people want to work for an innovative company, where the working environment is more attractive, stimulating, and fulfilling compared to other less pioneering companies (Ibid.). Consequently, attracting and developing the next generation of 'Edisons' who will chart a new wave of innovation is what will allow the company to continue to grow.

In the Welch era, success was defined by a very efficient operation that produced excellent products that attracted customers. And if products sold well in the primary markets, then their simpler price-reduced variations would also sell well in other regions. According to Dan Henson, CEO of GE Capital Solutions, this tiered-market presumption no longer holds:

> The competitive environment in the emerging markets has changed dramatically. In the past, regardless of the [market], where electronics business was concerned, it always came down to companies from Japan or

> developed nations in Europe and elsewhere. Now, however, there are unexpected … opponents appearing locally or from other emerging markets. For this reason we have to get closer to our customers. (Yamakawa, Ito, & Yamazaki, 2008: 32)

Breaking the tiered-market approach to product development required changing the ingrained Welch-ian corporate mindset and is why Immelt, after becoming CEO in 2001, revised the company's values, shifting them away from an *internal* product orientation outwards towards a more *external* customer focus. Another step was to strengthen the sales and marketing functions so employees could create and plant the seeds that will bear fruit far down the road, and foster the commitment to cultivate endeavors over the long term (Prokesch, 2009: 104). This has led to what General Electric's Chief Marketing Officer Beth Comstock described as a "green is green" business model that is not less corporate but more human by considering the company's role in the community to solve environmental challenges that transcend borders and cultures while driving profitable growth (Ricky Taguchi, personal communication, personal communication, 2009, April 27; General Electric 2009a). Key elements of this more humane focus include building water and energy infrastructure for resource-scarce countries, investing in healthcare technology, and creating environmentally friendly products for markets everywhere (General Electric, 2008a: 20).

The transition from a product-orientation to a more humane one has been difficult, especially in an organization still draped in the vestiges of Welch's "red ocean" beat-the-market approach and a business environment where eco-friendliness has become platitude. According to Immelt, getting leadership teams in General Electric to work on projects that might bear fruit long after they are no longer at the company requires persistence, incessant reminding, and a positive outlook. "It's hard," said Immelt in an October 2008 interview with

the *Harvard Business Review* (Prokesch, 2009: 105). "First you try to lead by example. People see me investing in the water business. It's financially so-so. You take four steps forward, three back. But hey hear me constantly saying, 'Don't touch it. Someday this is going to be a really great business.'"

Despite its difficulties, the shift towards a corporate culture in sync to the diverse needs of community stakeholders is starting to bear fruit. GE Healthcare CEO John Dineen acknowledged that his predecessors at the transportation division, where he was CEO until 2005, had planted the seeds that he would eventually cultivate into new growth opportunities, including next-generation diesel electric locomotives and gearing technology for wind turbines (Prokesch, 2009: 104; General Electric, 2007a: 106). Dineen recognized that his role at GE Healthcare now included planting the seeds that his successors will one day harvest.

Fosters a Feedback Ethos to Drive Change and Growth

There is no assessment training at General Electric, nor does the company make use of external or third party assessors to evaluate employees. Rather, employees learn by doing, evaluating their peers every day. This starts through a process of casual referencing; "asking around" to assess theirs or other employees' performance from a peer's perspective (Tatsuhito Sugaoi, personal communication, 2009, May 28). And, when asked about a specific employee, the appropriate response should be candid and constructive: mention strengths first, then the developmental needs (Ricky Taguchi, personal communication, 2009, April 27).

Despite this informal approach, the diverse perspectives of the 360 degree feedback – from supervisors, peers, team members, direct reports, even external customers – coalesce into a 'full picture' of employees that serves as a kind of internal resume that highlights their fit with the company culture, areas for individual improvement and growth, and plays a big

role in promotion and hiring decisions (Peilung Yang, personal communication, 2009, March 15).

The practice of evaluating others every day fosters a feedback ethos in General Electric that aligns with a key implication from the Myers-Briggs Type Indicator personality assessments (Myers & Myers, 1995) widely used in executive training, namely that "excellent leaders are always trying to explore and understand themselves" (Ricky Taguchi, personal communication, 2009, April 27). Feedback is a mechanism that provides employees with a personal mirror reflecting what the "eyeballs of others see," shedding light and building an understanding of personal strengths and weaknesses (Ibid.). This parallels the concept of the four-sector Johari Window, a cognitive psychological tool created by Joseph Luft and Harry Ingham to help people understand their interpersonal communication and relationships styles by identifying and what they (and others) know and do not know about themselves (Luft, 1961: 6-7).[56]

Candid feedback allows employees to clearly see themselves and expand their 'arena' – the region of understanding shared by both themselves and their coworkers – by diminishing their 'blind spot,' the region that coworkers know and understand but the employee is unaware of. However, getting employees to provide candid and constructive feedback that fits with the company's shifting growth values and *internal* to *external* focus has proven quite challenging, the most recent hurdle being the company-wide roll-out in 2008 of the 9-block assessment that replaced the previous performance-only evaluation system.

According to Senior Human Resources Manager Yagi Yosuke, the equally weighted structure of the 9-block in terms of objectives and values is essential to identify specific skill and capability gaps that can be plugged through additional training or work experience (personal communication, 2009, March 25). This is akin to parting the 'façade' and 'blind

[56] See Figure C-2 in Appendix C for a description of the four-sector Johari Window.

spot' (using Johari Window terminology) that veils what employees know from that their coworkers do not (or vice versa) to create awareness of unperceived performance deficiencies or development need.

The old 20-70-10 rule of the Vitality Curve – where the bottom 10 percent of performers are moved out of the company – no longer applies at General Electric. Rather, its essence is reflected in the way the 9-block stratifies employees based on development need with respect to growth playbook objectives and values. From his experience with the new assessment format, Yosuke finds that about one in 10 employees are categorized as 'role models' whose performance exceeds both objective and value expectations, while most (about 60 percent) are 'strong contributors' who meet both expectation types and require only general training to develop further capability and grow (see Figure 6-1). Employees rated below expectation in one category are given additional training to address their specific objective- or values-based shortcomings, while those rated below expectation in both categories are labeled 'unsatisfactory' and, barring unforeseen circumstances that justify the overall poor assessment, removed from the organization.

To clarify how values should be assessed, in 2009 the global corporate HR provided a framework defining the expectation criteria with respect to each value, with slight variations for each band in the organization. For example, for the PB band, the evaluation categories include *external focus*, *clear thinking*, *imagination*, *inclusiveness*, and *expertise*, each one rated into one of three levels ranging from low to high: development needed (lowest), consistently meets (average), exceeds expectation (highest). However, according to Crotonville Leadership Japan Manager Taguchi (personal communication, 2009, July 17), the guidelines oversimplify the appraisal process by restricting the ratings to just three "pull-down" options, precluding any possibility for a truly comprehensive or nuanced assessment of an employee's ability to embody and demonstrate each growth value.

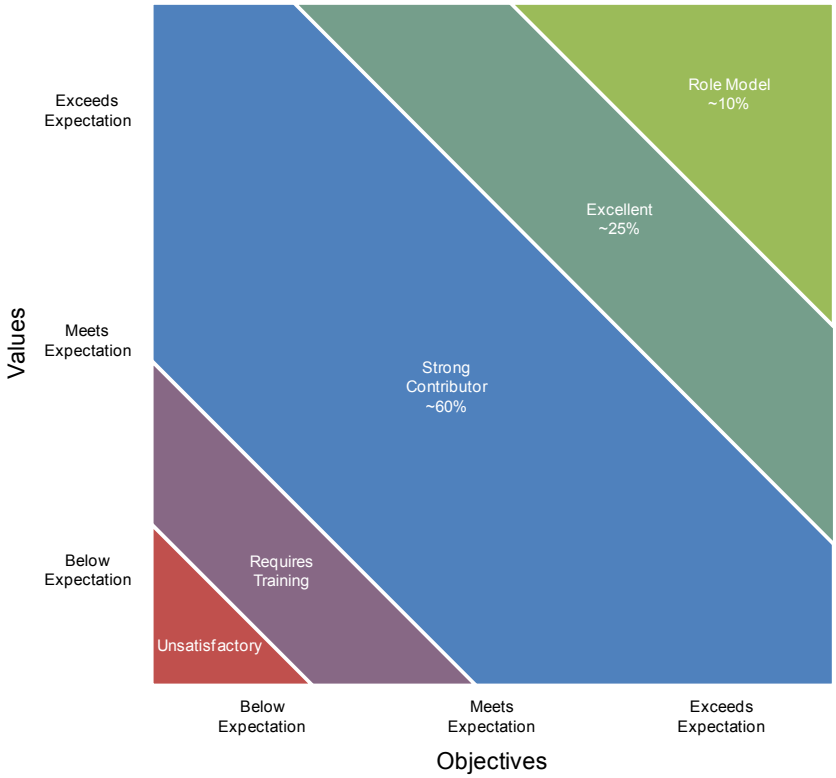


Figure 6-1. Workforce Stratification based on the 9-block Assessment.

Created by author.

The 9-block system only works if employee feedback is frequent, constructive, and candid, and many at General Electric are still learning how to rate a coworker with respect to values. Other issues affecting the 9-block include familiarizing all employees with the values-based evaluation methodology, and getting supervisors to spend time observing their direct reports in order to judge their performance more fairly and consistently. "An absolute assessment of values is impossible," said Yosuke, "but it still counts for half of the entire evaluation. The [employee] feedback loops are a great tool to assess the values."

One way to instill the discipline of constructive and candid feedback is through frequent self-assessment. For example, in the entry-level Crotonville course Foundations of GE Leadership (FoL), managers learn about their personal social style and how to manage it

while interacting with others.[57] "GE employees have to be flexible," said Taguchi, a veteran FoL instructor. "Although it is hard to change your normal style, being unaware of it is even worse!" It is all about exerting control over what he referred to as the "unknown" – the unconscious side of the individual that is hidden under the controllable conscious side (Ibid.), just like the submerged part of a floating iceberg.[58] Self-assessments and feedback allows FoL participants to peer into their hidden and submerged side, such as their normal social styles, and gain control over otherwise unconscious behavior.

Another practice that drills employees in the art of giving feedback is the rating of leadership instructors and guest speakers at the conclusion of each training session. Scoring is based on three criteria – understanding, explanation, and performance – that focus on specific points such as teaching strengths, delivery, content, and suggestions for improvement. The criteria are rolled into an overall "satisfaction" rating, a blend of content satisfaction and trainer satisfaction, to track the performance of GE Global Learning instructors, who must achieve a satisfaction score of 4.2 or higher out of 5 to maintain their trainer certification status (Ibid.).

Other behavior assessment and feedback tools (apart from the Myers-Briggs personality test, Johari Window, and the four social styles) that form part of the General Electric leadership training arsenal include DISC[59], which examines an individual's behavior in a given environment, and the Forming-Storming-Norming-Performing model of teamwork development, conflict management, and group dynamics (Tuckmann, 1965: 384-385).

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[57] The four social styles, according to psychologists David W Merrill and Roger Reid (1981: 61-65), are *driving* (strong willed and emotionally controlled), *expressive* (outgoing and dramatic), *amiable* (easy going and supportive), or *analytical* (serious and exacting).

[58] The Iceberg Metaphor of Consciousness is described in Figure C-3 in Appendix C.

[59] The DISC assessment tool, based on the work of psychologist William Moulton Marston (1928), examines the following four universally accepted dimensions of individual behavior in a given context (or environment): 1) *dominance* relating to control, power and assertiveness, 2) *influence* relating to social situations and communication, 3) s*teadiness* relating to patience, persistence, and thoughtfulness, and 4) *conscientiousness* relating to structure and organization.

Swiftly Aligns the Organization into Cultural Sync

The General Electric organization can change quickly. In March of 2003, the same year CEO Immelt changed the company's values, he also revised the way businesses would be evaluated. The new hurdle would be based on Return on Invested Capital (ROIC) and the first victim – the life insurance business – was swiftly sold later that same year.[60] This quick response was only possible after an intense dispersal of Immelt's new "goals," using live web chats and steaming videos via the company's intranet, to all business leaders who, within a week, had cascaded the message down the ranks (Yagi Yosuke, personal communication, 2009, March 25). More recently, in 2007, during the financial recession precipitated by the mortgage credit crisis in the U.S., Immelt's message to "keep the company safe" was dispersed just as quickly throughout the organization (Ibid.). In other words, when the goals of the game change at the top, the rest of the General Electric organization quickly follows.

This swiftness also applies to the use of new tools and frameworks. Frequent performance reviews, usually once a month, serve to create cultural alignment and accelerate the adoption of new practices, most notably via intentional evaluation biases that positively rate the pioneering use of the latest tools promoted by headquarters, especially in business plans and presentations (Peilung Yang, personal communication, 2009, March 15). This helps explain why the CECOR multi-level sales and marketing planning model (and CTRAN, its equivalent for financial planning) became so widely adopted by all businesses and divisions just six months after it was released, despite difficulties to verify its impact on performance due to lingering implementation and modularity issues (Ibid.). Although such biased evaluation distorts feedback candor by benefiting those who creatively weave elements of new tools, such as CECOR, into their projects and presentations over those who do not, the

[60] Return on invested capital (ROIC), is a measure of the effective utilization of capital (owned or borrowed in the form of equity or debt) in a company's operations. It is calculated by dividing net income (after taxes) by total assets (minus cash and non-interest-bearing liabilities).

opportunity to capitalize from the distortion also prompts high-performers to quickly learn and use the latest tools, in turn pioneering new practice standards that facilitate their everyday use and swift adoption by others.

One of the most intense performance reviews at General Electric is the all-day *assimilation* session for newly appointed business leaders. Held one month after the start of the leader's tenure, the session begins with an ice breaker during which the leader lists what he or she knows and does not know about a specific business area. Facilitators from the human resources department then write down 200 to 300 questions, all sourced from the leader's direct reports, which the leader must then address after 30 to 60 minutes of preparation. The purpose of such assimilation sessions, according to Human Resources Manager Yosuke (personal communication, 2009, March 25), is to culturally align new leaders and accelerate their learning curve from one year to two months so they "land on their feet running." However, if after several months a leader fails to meet performance or value expectations, he or she is given a chance to recover and re-calibrate through a *re-assimilation* session, which has a similar format to the assimilation session, but is design to identify, challenge, and resolve the leader's ineffective management practices and reassert the company's growth values.

An important facet of General Electric's varied businesses and divisions that keeps them in cultural sync is their closeness to corporate headquarters though shared organizational, financial, and human resource objectives. To create awareness among employees of the company's diverse business activities, the corporate office at General Electric publishes a weekly *Telling Our Story* newsletter, a summary of press releases and news articles on recent breakthroughs and accomplishments in the Technology, Energy, Finance, and Media divisions. Topics are varied, from efforts to remotely improve healthcare services and awards given in recognition of exemplary service to the revenues of recently

NBC produced movies (General Electric, 2009g: 1). But a more revealing anecdote regarding the difficulties of maintaining cultural sync is the disruptive impact that organizational separation can have on corporate culture, as was the case of GE Plastics.

After GE Plastics, one of General Electric's oldest divisions formed in 1967, was sold to the petrochemical manufacturer Saudi Basic Industries Corporation in 2007, many employees felt the division's culture was so strong that it would not change (Peilung Yang, personal communication, 2009, March 15). Yet SABIC, the new company formed after the merger, was vastly different. Although it aimed to remain GE-like, there was less focus on performance, and the number of expats, many of them from the U.S., diminished significantly, impacting the international atmosphere of the organization.

However, the most significant changes, unnoticed during the first few months after the merger but quite obvious 18 months later, were all related to the severed connection with the global General Electric organization: lost opportunities for interaction, diminished networking with peers, lack of mobility, limited development resources, and fewer prospects for promotion and growth. According to one former GE Plastics manager now at SABIC, General Electric was very performance driven and highly demanding, but at SABIC the intensity and the drive to achieve were not as strong as they had been before the merger. Reminiscing on the old GE Plastics, he felt proud and special to have been a part of an business culture where he was able to achieve so much (personal communication, 2009, March 15).

6.2 Toyota's Continuous Improvement Team-oriented Philosophies and Values

At Toyota, employees learn to view problems as simple facts – the result of a deviation from a given standard. Overcoming a deviation requires making it visible so others can help identify the root cause, devise a fix, and arrive at a new and improved standard that is then adopted elsewhere in the organization. This collaborative approach requires patience

and trust, and goes against the prevailing assumption in most results-driven organizations that problems are caused by people, not the system, and responsibility (and blame) lies with the individual rather than the group (Liker & Hoseus, 2007: 166).

The approach to problem solving at Toyota evolved slowly over a long time, cultivated and passed on through practices and philosophies developed and espoused by company founders such as Sakichi Toyoda, who created the parent company (Toyoda Automatic Loom Works), his son Kiichiro Toyoda (the founder of Toyota Motor Corporation), Taiichi Ohno (creator of the Toyota Production System), and Shotaro Kamiya (developer of Toyota's domestic and global sales network). Under the presidency of Fujio Cho, as Toyota's global expansion in the early 2000s accelerated, the company put into writing the accumulated wisdom of the founders with the aim, according to Vice President and Global Knowledge Center head John Kramer (personal communication, 2006, August 9), of committing to "writing what had been passed around the village bonfire for years and years, from the elders to the next generation." The result was *The Toyota Way 2001*, a 13-page instructional handbook, known internally as the "Green Book," containing the values, beliefs, principles, insights, and intuitions that are the basis of the company's core values (Toyota Motor Corporation, 2001: 1).

Written in English and Japanese, the Green Book was first distributed to Toyota associates around the world in April 2001, providing them a common framework to guide strategic decision making and cope with the uncertainties of constant change. This was followed by *The Toyota Way in Sales and Marketing*, known as the "Silver Book," a documentation of the founders' philosophies that have specific relevance to sales and marketing operations that was sent to all distributors in October 2002 (Toyota Motor Corporation, 2002: 1). Both books have essentially the same content, with the Silver Book

focusing more on people as a source of knowledge, and listening to what the dealers have to say.

In the process of creating *The Toyota Way 2001*, two core values were identified as the pillars of Toyota's corporate culture: "continuous improvement" and "respect for people" based on people's ordinary capabilities (Toyota Motor Corporation, 2001: 3). While Toyota is not alone in having core values originating with its founders, it is unique in the way it inculcates and ritualizes them in practices designed to test and reinforce their relevance every day through hands-on experience in local operations worldwide. The Toyota Production System, with its emphasis on continuous improvements, epitomizes this practice. Dr. Takis Athanasopoulos, Executive Vice President of Toyota Motor Marketing Europe, stressed the tacit understanding of core values through day-to-day experience:

> The Toyota Way is not a generic company culture. I have experienced it much more as a concrete way of thinking and working. It is something that every employee can apply in his or her daily work life. It provides clear guidance and makes business decisions better and easier [to execute]. (Osono, Shimizu, & Yonten, 2004: 24)

Identifying Toyota's core values also proved challenging because of the recognition that values evolve over time. For this reason, honorary Toyota chairman Shoichiro Toyoda insisted on putting "2001" on the title to reflect the transient nature of the Toyota Way. As Executive Vice President Yukitoshi Funo (personal communication, 2006, August 21), then President of Toyota Motor Sales, U.S.A., explained, the version published "in 2001 may not be the way things are done in 2010, or in 2020." Despite this, the values that define the company's corporate culture that stem from the two pillars of *The Toyota Way 2001* are:

- *Challenge* the organization with long-term visions

- Establish a *kaizen* mindset of continuous improvement
- Practice *genchi genbutsu* to see things firsthand
- *Respect* people and their capabilities to contribute
- Cultivate personal and professional growth through *teamwork*

This next sections focus on the five Toyota Way values that "transcend language" and are valid "in every land and society," and how they are disseminated through on-the-job training and in the accumulated historical stories and anecdotes as retold and reflected in the Green and Silver books (Toyota Motor Corporation, 2001: 3).

Challenge the Organization with Long-term Visions

Toyota has persevered through hardship, and over the long term, because of the mindset of its employees who see obstacles as both sources of power to energize people and as challenges that can be overcome; a *esprit de corps* stemming from their shared belief that "tomorrow will be better than today" (Osono et al., 2008: 124). This optimism has grown out of the company's institutional memory from the difficult experiences it has endured following its founding in 1937, and passed down from the founders of Toyota, whose slogans, such as "endure a hundred times, strengthen yourself a thousand times, and you will complete your tasks in short order," are filled with the spirit that perseverance overcomes all obstacles (Matsubara, 2004). These experiences include weathering the hardships of World War II and the financial depression that followed, entering the American automobile market about 50 years behind the dominant domestic producers, and the difficulties of an appreciating yen during the 1990s.

In 1950, after a decade of depressed economic conditions in Japan, Toyota faced its first major challenge – a crippling labor dispute that forced its factories to close for two months. To stave bankruptcy, 1,500 employees, or one fourth of the entire workforce, were

laid off. In a show of solidarity and to express remorse at this outcome, the entire management team, including President Kiichiro Toyoda, resigned. According to Senior Managing Director in charge of Human Resource Management Akio Matsubara (2004), these early hardships shaped the company's core values and identity:

> [The company was] so strapped for cash that we became obsessed with eliminating *muda* [waste] and accelerating return on investment so we could immediately reinvest back into the business. So, we could not keep an inventory of parts, and if we produced a defective product, it was a catastrophe. [The Toyota Production System] was born in this environment and has survived to the present day. These days, TPS is part of our corporate identity, but it was certainly not present from the beginning. It was created in response to a couple of threats; one was the labor dispute and the other was the sense of impending doom felt by Kiichiro Toyoda and the management team that remains to this day. More than just an institutional memory, I believe [this fear] was imprinted by the company's turbulent origins.

The next challenge was Toyota's foray in the late 1950s into the large U.S. automobile market dominated by front-end Buicks and tail-fin Cadillacs. As Chairman Shoichiro Toyoda described it, the *Toyopet Crown* – the company's debut entry in 1957 – couldn't make it onto the highway unless the on-ramp sloped downhill. But in a display of its conviction to continuous improvement – one of the pillars of Toyota's corporate culture – it kept on trying to get it right, eventually producing the more sensible *Corona* in 1965, followed by the *Corolla*, the *Camry*, and eventually the *Lexus*.

In the early 1990s, Toyota faced another major challenge with the steep appreciation of the yen that made its products more expensive to overseas buyers and intensified a

growing trade row with the United States over car imports and Japan's growing trade surplus. Compounded by the burst of the Japanese bubble economy that depressed domestic car sales, profits dropped almost 60 percent from 1991 to 1994. During this tumultuous period the company engaged in wide-ranging discussions about its long-term future, resulting in a vision statement – the *Toyota Earth Charter* (adopted in 1992 and revised in 1997) – that made environmental sustainability a top priority (Toyota Motor Corporation, 2009b). "Unless we solved the environmental issues," said Executive Vice President Tokuichi Uranishi (personal communication, 2007, September 26), "there would be no future for the car. But if we did resolve this issue, we would be making a contribution to society and could sell our cars with pride." So Toyota forged ahead, taking a drastic approach to tackle environmental issues that eventually led to development of the first generation *Prius* in 1997, even as competitors doubted the technical and financial viability of the hybrid vehicle concept.

In the 2000s, the most pressing challenge at Toyota has been the increasing complacency in the workforce that developed during the company's decade-long global expansion streak that ended in 2007, leading employees to speak of the Toyota Way as a fixed set of rules rather than an evolving system of values. These individuals tended to sideline or even ignore new ideas that did not fit their viewpoint, convinced that those who disagree with the Toyota Way will eventually be proven wrong. While there is no harm in showing pride for past achievement, basing future activities solely on past ways risks making business planning routine, inflexible, and ineffective. "The two things I fear most are arrogance and contentment," said former President Katsuaki Watanabe (personal communication, 2007, October 10). He said that he continuously reminded his managers during 2007 that contentment always precedes decline, that even the strongest fortress can collapse from a tiny crack made by a single ant, and that they should plug any leaks to ensure management is watertight.

To combat complacency, Watanabe initiated the "80,000 People Communication" program in 2007, requesting that all Japan-based employees communicate with coworkers across organizational boundaries to quickly identify and solve any problems affecting daily operations (Ibid.). If the problem could not be permanently fixed in short order, they had to designate a leader and create a follow-up plan with targets for resolving the outstanding issues. Watanabe acknowledged that asking all employees to identify, communicate, and fix problems took time away from their normal tasks, making them less efficient in the short term, but he said, "doing nothing now and letting problems grow unchecked costs much more in the future."

In a speech given to employees just prior to his appointment as company president in early 2009, then Executive Vice President Akio Toyoda echoed Watanabe's concerns about complacency when he highlighted the new challenges that lay on the horizon. "I do not think we were mistaken to expand our business and attempt to meet the needs of customers around the world," said Toyoda, "However, we may have failed to capitalize on our traditional strengths" (Toyota Motor Corporation, 2009d: 4). His speech came against a backdrop of extraordinary challenges – a record decline in vehicle sales and the rapid appreciation of the yen (from 118 per dollar to 100 per dollar during fiscal 2008), leading to the company's first profit loss in six decades (Toyota Motor Corporation, 2008a: 3; 2009a: 3). Related challenges included stemming excess global production capacity on the order of 30 percent, and the prospect of shuttering the 25-year-old NUMMI facility in California, representing Toyota's first plant closure since 1950, following General Motors exit from the joint venture due to bankruptcy proceedings (Bunkley, 2009: B3). According to Toyoda (Toyota Motor Corporation, 2009d: 4), the only way forward from these obstacles was to return to the founding principles of the Toyota Way:

> We must strengthen the principle of contributing to society through the manufacture of vehicles. We must also reaffirm Toyota's principles such as putting the customer first, genchi genbutsu, creative thinking, and learning from each other. If we can do that, I know Toyota will bounce back.

Establish a Kaizen Mindset of Continuous Improvement

Behind the shared belief at Toyota that "tomorrow will be better than today" is the attitude that "people will make it a better day" (Osono et al., 2008: 127). This is embodied in the routine practice known as kaizen, a Japanese word meaning "continuous improvement" now synonymous in the vernacular of manufacturing industries around the world with the habit of doing a little better every day by eliminating waste and continuously becoming more efficient.

Kaizen is an attitude of never being satisfied with the status quo, which helps to explain why Toyota employees are encouraged to continuously and persistently conduct trials and experiments. According to Vice President John Kramer (personal communication, 2006, August 9), the kaizen attitude parallels the entrepreneurial spirit of a small company. "There is a kind of hunger there," he said, "a fire in the belly that makes [you] always want to be a little bit better, do [your] jobs better, and if you can learn something every day and try to make a difference you're going to be successful."

To establish a kaizen mindset and develop problem solving acumen among its managers, Toyota conducts two-week kaizen training events known as *jishuken*, or "self-study" sessions that are facilitated by internal coaches and mentors who are experienced TPS practitioners. The facilitators focus on improving communication and leadership skills and on how to integrate the diverse inputs of other team members into an implementable improvement solution (Liker & Hoseus, 2007: 182). A typical jishuken event has two parts: a

one-week look at implementing specific process improvements based on interviews and the identification of waste at *genba*, the "frontlines" where the action takes place, followed by a more comprehensive systems-wide kaizen (i.e. improving a series of processes or even an entire production facility) during the second week (Hiroshi Watanabe, personal communication, 2009, August 7).

Don Jackson, former Vice President of Toyota Motor Manufacturing, Kentucky, Inc., remarked on the steep learning curve he encountered during his jishuken training in Japan:

> We were told to stand [at the supplier's facility] and observe to find waste in process… After hours of observing I was convinced they had given me a process with no waste left… My trainer [a TPS expert] informed me, "no, there is plenty of waste in there, keep observing." Finally, after two more hours, it was like the lights came on and the waste was jumping out at me. I was able to list over 20 items to address (Liker & Hoseus, 2007: 183).

According to Jackson, his training was conducted in the usual Toyota fashion: he was not given the answers, but left to struggle and discover a solution on his own.

Another way Toyota managers learn kaizen is through the practice of visual management to identify deviations from a known standard. One method is the use of color coded markers, such as red and yellow lines, to demarcate progress milestones in a multi-step process.

In a car assembly line, a red line indicates a shop floor employee's wait position after having placed parts on one car and walked back to the supply rack to pick up parts for the next car. Managers are taught that 'jumping' the red line to get a head start moving to the next car causes employees to install parts ahead of *heijunka*, the just-in-time standard for a level process, forcing them to walk longer distances between the supply rack and the car and

adding an additional five seconds to an otherwise 60-second process (Toyota Georgetown, 2009; Liker & Hoseus, 2007: 172-173). Managers also learn that waiting at the red line provides an opportunity to observe the process and spot potential areas for improvement. For example, consistently arriving at the red line ahead of standard implies that extra time is embedded in the process, meaning the standard, and the process, could be further optimized.

In contrast to the red line, which demarcates the end/start position of a cyclic process, a yellow line identifies the intermediate position of a process that is 70 percent complete. By knowing which step should be complete with respect to the yellow line, team members can quickly determine if their progress is falling behind that required to finish on time, allowing them to call for help from team leaders and together look at the problem, identify the cause, and implement a solution before having to halt the entire process (Liker & Hoseus, 2007: 174).

According to Tokuichi Uranishi, cultivating a kaizen mindset among employees also requires instilling a sense of crisis in the organization. "If we become satisfied with the status quo," he said, "things start to go wrong" (personal communication, 2007, September 26). As an example, Uranishi mentioned how the company's continued existence hinged on overcoming the technical hurdles to reduce the environmental impact of the vehicles it produced:

> If we don't reduce the environmental burden through technical innovation in our cars, we will not survive in the future. This is a long-term sense of crisis. But unless you are facing a real crisis, it's very difficult to maintain a sense of crisis among employees. Toyota has been good at fostering this, and implanting [a continuing sense of crisis] in the organization remains one of management's most important tasks.

Practice Genchi Genbutsu to See Things Firsthand

The practice of genchi genbutsu, which means "go and see things for yourself, firsthand," is a value that defines Toyota's problem-solving action-oriented culture. At an international conference in St. Petersburg in 2007, Toyota, Chairman Fujio Cho explained this value simply as, "Have you seen it?" Toyota employees are taught that if they have not seen something firsthand, then their view of that thing is not factual, therefore nor credible. For example, while in St. Petersburg, Chairman Cho also visited a dealership where he noticed a long line of Toyota vehicles awaiting surface finish repairs. Concerned that the vehicles had been delivered with substandard quality, dealership staff reassured him that 90 percent of the cars were brought in to repair scratches from everyday use, not defects. This fit with his experience while at genba ("frontline"), where he found the local drivers to be "aggressive and will cut into your lane with only the slightest opening" (Osono et al., 2008: 131-132). Chairman Cho's genchi genbutsu in St. Petersburg helped him come to grips with the peculiarities of the Russian market.

Genchi genbutsu was developed in the shop floor under the notion that the root cause of a problem can be revealed through on-site observation, investigation, and inquiry. As an introduction to this practice, new employees are told the following story, included in *The Toyota Way 2001*, about company founder Kiichiro Toyoda as he walked by the production line and encountered a worker scratching his head and muttering that his grinding machine would not run. Kiichiro took one look at the man, rolled up his sleeves, and plunged his own hands into the oil pan, coming up with two handfuls of sludge. Throwing the sludge on the floor, he said, "How can you expect to do your job without getting your hands dirty!" (Toyota Motor Corporation, 2001: 8). The shop floor heritage of genchi genbutsu encourages employees "to see things firsthand," to search for root causes with their own eyes, and to solve problems with their own hands, and builds on the belief of Sakichi Toyoda (Ibid.: 9),

founder of the Toyoda Automatic Loom Works, Toyota's parent company, who said: "Before you say you can't do something, try it!"

Although genchi genbutsu originates in manufacturing, it applies equally at the retail level. Toyota managers maintain close relationships with the dealers, visiting them frequently, hearing their views, asking for their input, and ensuring they are involved in key decision-making processes. "We have to rely on other people to do the very best job they can, every day of the week and every month of the year, in order for us to achieve mutual success," said John Kramer (personal communication, 2006, August 9) to describe the value of maintaining close contacts with dealers and retailers, who bear the bulk of the responsibility to make success a reality. "We stay very close to the dealers," said Kramer, "we ask for their input when we are about to take on any new ventures or change our processes. We are constantly out visiting our dealers, hearing their voices and making them part of our process."

Similarly, Global Marketing Division General Manager Katsuyoshi Tabata (personal communication, 2006, July 24) also highlighted the importance of an interactive communication and involving dealers and distributors in the decision-making process to increase their commitment to Toyota:

> By sharing our future plans, in good times or bad times, dealers feel that they are trusted by the distributor, and that the distributor is trusted by TMC [Toyota Motor Corporation]. This will increase their commitment to Toyota, and it makes a difference especially when we can't provide new models for a while or when we want dealers to invest more in their facilities or people.

According to Tabata, genchi genbutsu also applies to the way Toyota executives learn business planning. "Unless we visit genba [the place where the action is], we cannot develop a good plan. Our bosses can tell if we develop a plan without going to genba," he said.

President Akio Toyoda echoed Tabata's sentiment when he outlined the company's global initiatives to redress the fallout stemming from the global financial recession of 2007 to 2009 that decimated vehicle sales in almost every market. "Of [Toyota's] principles," said Toyoda, "it is most important to focus all the company's resources and efforts on putting the customer first and genchi genbutsu" (Toyota Motor Corporation, 2009d: 4). As part of this initiative, Toyoda convened a team of six executive vice presidents to lead a global genchi genbutsu effort to "right-size" the product lineups regionally: stronger customer-focused variations in Japan, expanded hybrid options in North America and Europe, and new quality vehicles at affordable prices for growing and developing markets such as China, India, and Africa (Ibid.: 5).[61]

Respect People and their Capabilities to Contribute

Toyota follows a stakeholder driven approach to doing business, where success depends on placing the interests of customers ahead of all others in an environment of mutual trust and responsibility among all employees (Toyota Motor Corporation, 2001: 10). This philosophy stems from Shotaro Kamiya, the former President of Toyota Motor Sales Company, Ltd. in Japan, from April 1950 to December 1974, who described his sales approach as "customer first, dealers second, and manufacturer last," with the following rationale:

> The priority in distributing the benefits of automobile sales should be in the order of the customer first, then the car dealer, and lastly, the manufacturer. This is the best approach for winning the trust of customers and dealers and ultimately brings growth to the manufacturer. (Ibid.)

[61] The six executive vice presidents (and their area of responsibility) are: Yoichiro Ichimaru (Japan), Atsushi Niimi (North America), Shinichi Sasaki (Europe), Yukitoshi Funo (China, Asia, Oceania, Middle East, Africa, and Central/South America), and Takeshi Uchimiyada (Product lineups).

One implication of the customer first philosophy is that for every stakeholder to benefit, all of them have to move forward together. Kiichiro Toyoda's opening remarks during the inauguration of Toyota's first automobile factory in Koromo-cho (now Toyota City) on November 3, 1938, reflect this concept of the whole being made greater by the contributions of each individual: "Neglect your duties and you'll bring ruin upon yourselves; fulfill your responsibilities and you'll find yourselves enhanced. If each person makes the most sincere effort in his assigned position, the entire company can achieve great things" (Ibid.: 11).

Kamiya's customer first concept now permeates the entire organization, from the shop floor to the sales floor. Retired plant worker Kiyoshi Tsutsumi, recalled learning of the concept after being asked by his boss one day, "Who do you think is paying your salary?" He replied that the company paid his salary. "Wrong," he was told. "It's the customers. They buy our cars and the company uses that money to make the next car and then sells it. Your salary comes from that transaction." Tsutsumi remarked that this exchange – one often used in office and shop floor training sessions to teach the importance of respecting the customer – greatly impacted his view as a manufacturer, making him realize that it was his responsibility to make the right products and deliver the right quality to satisfy the customers who paid his salary (OJT Solutions, 2006: 57).

To promote mutual respect and trust, the work environment at Toyota emphasizes the minimizing of social distinctions between managers and employees beyond their job functions and responsibilities. Individuals are rarely praised for their individual accomplishments; it is reserved for the successful efforts of the team, regarded in the organization as the most basic operational unit. Global practices such as a universal dress code, undesignated parking spaces, open offices, and the same basic work benefits for all, help to reinforce the sense that each person is a part of the same team (Liker & Hoseus, 2007:

258). This effort has also taken root in the labeling of vehicles, which now emphasizes "Made by Toyota" over "Made in Japan" to underscore the contributions made by the company's global network of suppliers and plants (Osono, 2007: 12).

On the sales floor, the customer first concept has greatly shaped Toyota's relationship with distributors and dealers. From his experience at an American auto company, John Kramer (personal communication, 2006, August 9) recalled how the dealers in the United States were often denigrated by the manufacturer, especially if they were making a huge profit and the manufacturer was not; a relationship defined by a lack of respect and trust. This is at odds with Toyota's profit-sharing, collaborative approach with the dealers, where the flow of a greater portion of profit to the dealers instead of to the manufacturer ultimately benefits everyone because it gives dealers the opportunity to reinvest and improve their operations. "Increasing the number of dealerships is good for the factory, but not so good for individual dealers faced with the prospect of another new dealership across the street," explained Yukitoshi Funo (personal communication, 2006, July 28). According to him, if the factory is prioritized, the tendency is to increase the number of dealerships, but if the dealers are prioritized, the preference is to refrain from increasing the number of dealerships and instead work with them to come up with ways to increase efficiency. "Toyota is different from other manufacturers in its philosophy toward dealers," said Yoshimi Inaba, Executive Vice President and former President of Toyota Motor Sales, U.S.A. "We treat our dealers as partners. We truly listen to their opinions and incorporate them as an integral part of our entire business formula. We pursue growth with our dealers based on the same Toyota principles while helping to make them profitable" (Osono, 2005: 4).

The ramifications of the customer first approach were evident during the 1997 Asian Financial Crisis, when the rupiah lost 85 percent of its value (falling from 2,400 per dollar to a low of 16,000 per dollar), causing new car prices in Indonesia to shoot through the roof. To

cope with the anticipated drop in vehicle sales, Toyota's Indonesian sales subsidiary, Toyota Astra Motor (a joint venture with PT Astra International) introduced "five-day vacation weeks" and offered early retirement benefits to 1,100 employees, pioneering such initiatives in the region (Osono, 2002: 15). However, it resisted a plan by Toyota in Japan to stem financial losses by closing one of its two local production plants, arguing the move would prove costly once market conditions improved. By 2000, car sales recovered and Toyota Astra Motor used both plants to successfully launch a new vehicle, increasing its share of passenger car sales in Indonesia to 27.5 percent, from 9.1 percent in 1998 (Ibid.: 23). Mikio Nomura, former Executive Vice President of Toyota Astra Motor, credited his coworkers' steadfastness to prioritize the customer and stick their necks out by discarding the less risky plan proposed by headquarters in favor of the riskier route of preparing for an uncertain market recovery.

Cultivate Personal and Professional Growth through Teamwork

Teamwork has been stressed at Toyota since its early days, encapsulated in Kiichiro Toyoda's saying, "Each person fulfilling [his or her] duties thoroughly generates great power through gathering together, and the chain of such power leads to a ring of power" (Toyota Motor Corporation, 2001: 13). According to Human Resources General Manager Teruo Suzuki, this shared belief – that the contribution of the team is greater than the sum of the individual contributions – remains unchanged at the company. "Toyota is not the kind of company where a select few shine," he said. Rather, "[it] depends on all the workers … bringing their strengths into play to demonstrate their power as a team" (Mizoue, 2005: 69). This team-over-individual spirit reflects the core value in *The Toyota Way 2001* of "respect for people," and is interpreted in the company as, "Respect for the individual; realizing consolidated power as a team" (Toyota Motor Corporation, 2001: 13).

Every car has over 30,000 parts, and putting them together requires the coordinated and collaborative effort of many employees with diverse expertise in what former President Watanabe referred to as a "stage" where every single employee plays a lead role (personal communication, 2007, October 10). "As an organization you want to create a situation where one plus one equals three or even five, not two. That's what I call a team," he said. The role of managers is to create such a stage, where leadership is distributed amongst the employees who work alongside exemplars that serve as teachers and mentors and are seen as members of the team rather than "experts" standing apart from the group.

One practice designed to build teamwork is *jidoka*, or the act of stopping the process when a problem occurs. When a problem arises on a production line, anyone on the team (preferably the first one to see the problem) has the responsibility to stop the process, surface the problem (make it known), and find a solution. This practice grants employees the authority to push a button or pull an *andon* cord that stops an entire production line, making them feel empowered and that their effort as an individual counts (Toyota Motor Corporation, 2001: 12).

Teaching teamwork though jidoka requires an atmosphere of mutual trust where employees are encouraged to openly share knowledge and admit mistakes. This behavior does not come easy to those whose understanding of teamwork is skewed to mean "beating the other team," a competitive tendency often observed in the production simulation workshops at the University of Toyota, where trainees from the same company are divided into teams that build the same car but at supposedly different production facilities. When asked why they hide improvement ideas from their own teammates, the typical response is "They are not our teammates. They are the competition!" (Liker & Hoseus, 2007: 257). This prompts a learning opportunity to teach the value of teamwork and the benefit of

communication to share best practices, and how it requires everyone to be forthcoming and frank about their successes and failures and to respect and trust the contributions of others.

6.3 Conclusion – The Corporate Culture Capability Booster Frameworks

This chapter looked at the corporate cultures in General Electric and Toyota that are tuned to nurture 'Moon Shot' talent, with the former emphasizing the inside out development of people to grow the company, and the latter putting the team, and the role that each team member plays, as a source of power and growth in the organization. This final section characterizes the impact that each company's culture has on the accretion of capability based on the capability booster framework.

General Electric – Inside-out Development of People

Structured and flexible change at General Electric stems from a strong organizational culture that swiftly aligns employee performance with company objectives (e.g. a more humane corporate focus, the environmentally-oriented "Green is Green" business model). This rapidity can be attributed to a biased assessment environment, where the demonstrated use and mastery of up-to-date business skills is weighted positively in the frequent performance reviews that take place throughout the year. This bias promotes the swift adoption of the latest business tools being pushed by headquarters (e.g. CECOR and CTRAN planning models) by the majority of results-oriented employees who will readily exploit such an easy way to boost their performance, eventually pressuring others to follow in their tracks.

Cultural restraint to change is reduced through a casual and widespread referencing and feedback system that increasingly emphasizes performance through cooperation and team work. This shift in emphasis stems from the replacement in 2003 of long-standing, internally-focused, winner-takes-all values with a new externally-focused set, where growth depends on creativity and imagination, team-oriented problem solving, engaged leadership, and a

committed long-term outlook. The transition in values also changed the focus of employee training, shifting towards more collaboration (i.e. teams combine their efforts to solve one problem) and less competition (i.e. teams separately tackle the same problem). Performance evaluations also changed, growing in scope beyond the appraisal of concrete yearly goals and objectives to include the demonstrated adherence and embodiment of growth values. However, the new qualitatively evaluation criteria have sown uncertainty in a workforce accustomed to appraisals based solely on measurable and quantifiable metrics, leading to inconsistent performance evaluations that could slow or even halt employee advancement, potentially increasing restraint to change in the organization (see Figure 6-2).

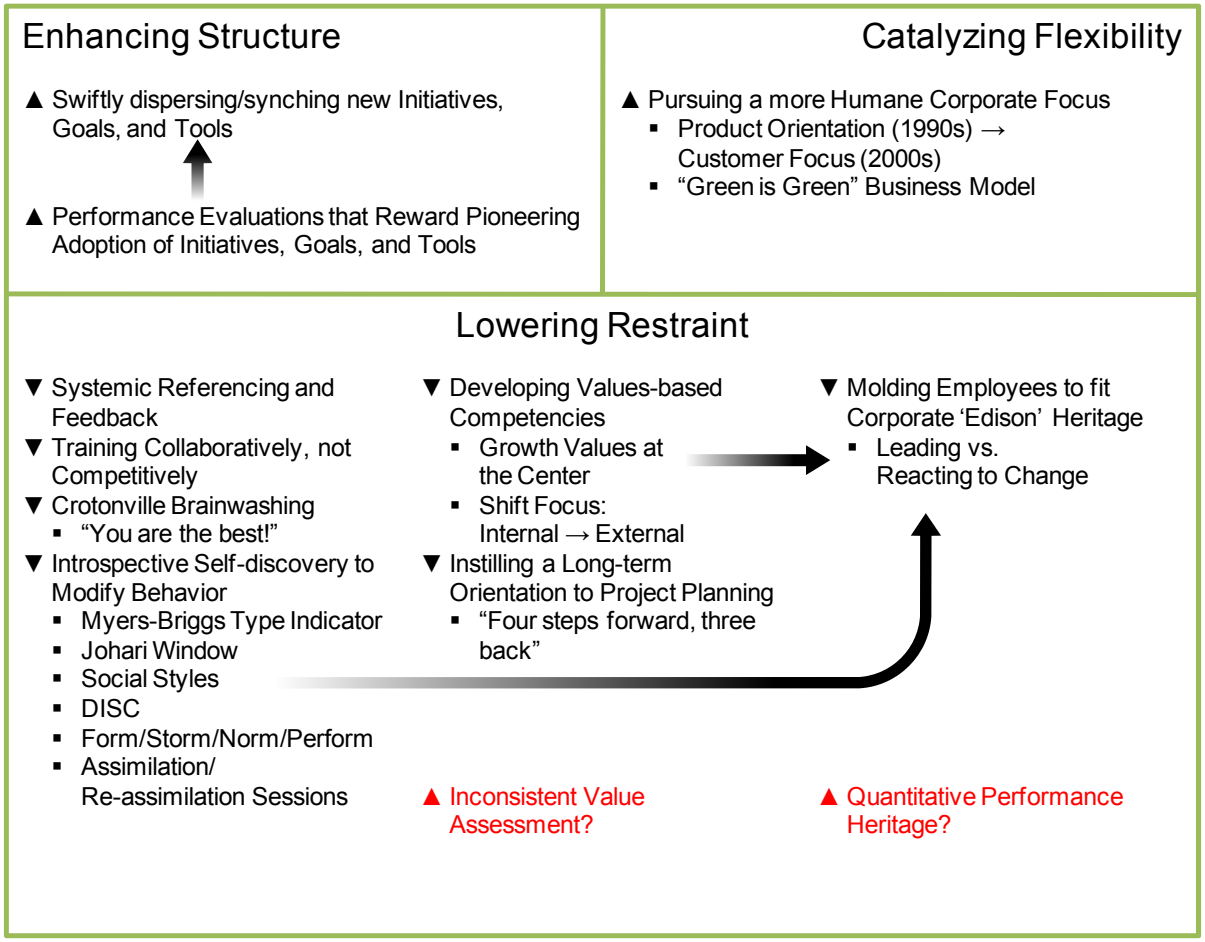


Figure 6-2. The General Electric Corporate Culture Capability Booster Framework.

Note. Created by author.

To support team-based training, the company showers employees with personality and behavior assessments (e.g. Myers-Briggs Type Indicator, the four social styles, DISC, re-assimilation sessions) to help improve interpersonal, communication, and leadership skills through introspection and self-discovery. The company also shines a spotlight on star performers, showering them with praise and constantly reminding those who attend high level leadership courses that they represent the "best of the best." Although this runs counter to the collaboration focus of training, the aim is to mold employees to better fit with the company's growth values and its 'Edisonian' heritage of leading change, never reacting to it.

Toyota – Teamwork as a Source of Power and Growth

The culture at Toyota catalyzes flexible change by pursuing challenging long-term visions linked to the company's future survival, such as tackling environmental issues (e.g. *Toyota Earth Charter*), instilling a sense of crisis into the organization. To offset such a demanding state of affairs, the company culture also instills in employees an optimism that "tomorrow will be a better day," borne from a heritage of enduring past hardships (e.g. financial hardship in 1950, trade issues during the 1980s, currency appreciation in the 1990s) along with a problem-solving attitude that precludes satisfaction with the status quo. This optimistic problem-solving mindset helps employees cope with the reluctance and doubt that arises from the pursuit of challenging visions, channeling the sense of crisis into a source of power to persevere and overcome the difficulties that lie ahead.

Structured change is enhanced by the continuous improvement practices in Toyota, epitomized by the Toyota Production System (TPS) (e.g. process/system kaizen, jishuken, visual management, jidoka), a key part of the problem-solving mindset in the company. Put simply, there are two sides to TPS – the action (e.g. jidoka to stop the process) and the

attitude (e.g. jidoka to admit a mistake). When combined, these action-attitude binaries erode organizational restraint to change by fostering group-oriented norms and practices that promote mutual respect (e.g. customer first, dealers second, manufacturer last), trust (e.g. social homogenization), and teamwork (e.g. jidoka). In addition, giving praise for a job well done is reserved only for exemplary team effort, never for one individual's performance. This approach – where outstanding achievement by one person rarely shines – is the complete opposite to that of General Electric, where star performers bask in the limelight, and is intended to foster and maintain respect among project team members (see Figure 6-3).

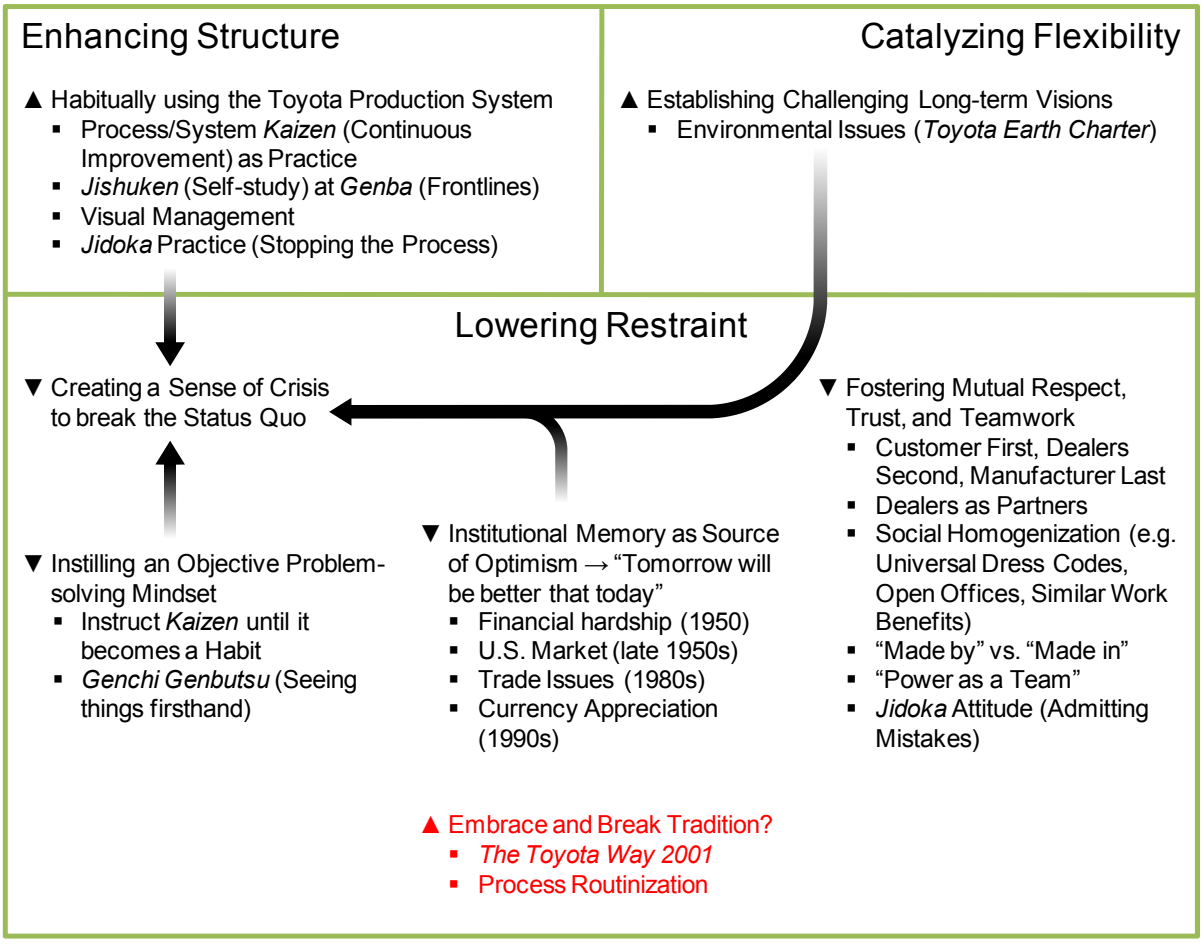
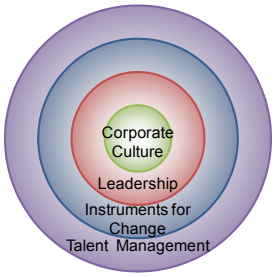


Figure 6-3. The Toyota Corporate Culture Capability Booster Framework.

Note. Created by author.

Other norms and practices that reduce bias at Toyota include treating dealers as partners, using "made by" vs. "made in" labels to recognize the contributions of global suppliers and plants, and getting employees to believe in the "power as a team." However, restraint to change could rise as complacency intensifies in the organization, mostly from the unchecked spread of counterproductive thinking, such as a failed recognition of the transient nature of the values espoused in *The Toyota Way 2001*, or the notion that the Toyota Way will always prevail in the end – a distorted expectation that runs against the "optimism" derived from having successfully prevailed over extreme difficulties in the past.

Chapter 7 - The 'Ecologies' of Capability Accretion



Companies often fail because of their reluctance to let go of the past and move beyond the tried and true methods created by previous success, even after these have been rendered obsolete by changes in the business environment. So as the organization, systems, and employees become dependent on antiquated activities that are no longer effective, it becomes increasingly difficult to abandon outmoded practices, learn new ways, and cope with change. In time, this slows the development of performance-enhancing capability, drives down efficiency, productivity, and competitiveness, and condemns its victims to a downward spiral of gradual corporate decline. To avoid obsolescence, companies have to internally recalibrate their activities to steer themselves on a path that embraces change.

As explained in Chapter 1, an organization is composed of two sides, one structured and the other flexible, like two wheels connected by a shaft. Both sides are important – together they determine the ability the capability potential of the organizational whole. However, emphasizing just one side makes it larger than the other, causing the organization to develop lopsidedly and spin out of control. To move towards higher levels of performance both sides have to be emphasized equally, aligning the organization to embrace change and develop new performance-enhancing capability.

This is the basis of model capability accretion. Developed in Chapter 2, this model operationalizes how restraint from operational rigidity, organizational inertia, and socio-cultural norms curbs learning, knowledge creation, and ultimately, the development of capability. The capability accretion model relies on three key assumptions: 1) capability

development tapers off as it approaches a limiting 'plateau,' 2) higher-level capability 'frontiers' exist, and 3) capability-enhancing endeavors are in effect in the organization.

In practical terms, the model of capability accretion explains the 'diminishing returns' of learning and performance: why many years at the same company can be equivalent to just a few years because people stop learning and instead re-experience repackaged variations of old experiences. To overcome the 'diminishing returns' of learning requires a vibrant 'ecology' of capability accretion, a learning environment where the development process is dynamically reinvigorated and enriched and where embracing change boosts capability yet does not inhibit learning.

This final chapter characterizes the 'ecologies' of capability accretion in General Electric and Toyota that nurture capability in their organizations. This begins with a layer-by-layer look at their distinct capability-building 'ecologies,' before presenting a new set of talent 'Moon Shots' that is inherent in both firms.

7.1 Capability-building 'Ecologies' in General Electric and Toyota

As mentioned in Chapter 1, General Electric and Toyota have in place activities that align the organization (i.e. their *structured* and *flexible* sides) and lower the *restraint* to the development of capability. This was illustrated using the Capability Booster Framework, a three-block model described in Chapter 2 that shows how capability can be increased by capitalizing on individual and organizational experience, leveraging it to overcome the restraint to change that slowly calcifies inside organizations, in operational systems, and in employees, over time degrading acceptance to capability-imparting change. For example, General Electric and Toyota *enhance structure* by developing talent over the long term, *catalyze flexibility* by evolving and dispersing the tools that drive change and fuel growth, and *lower restraint* to change by cultivating the attitude to learn by solving problems at the source and by infusing people with dissatisfaction for the status quo.

This section elaborates on these four basic approaches to develop capability at General Electric and Toyota, presenting a layer-by-layer description of their 'ecologies' of capability accretion. This unified evaluation, shown in Figure 7-1, combines the distinct capability booster frameworks of each layer where capability develops in the organization – Talent Management, Instruments for Change, Leadership, Corporate Culture – to show how each company enhances structure, catalyzes flexibility, and lowers restraint to create nurturing 'ecologies' that routinely push the limits of organizational development and performance-enhancing capability.

Talent Management Layer

General Electric operates a talent management infrastructure that promotes structural change by *dispersing 'GE branded' training content* through global training centers and job rotation programs that build shared understanding of business planning and project execution protocols. Other sources of change include the *dynamic learning environments formed when employees train, learn, and develop together*. To capitalize on these environments and curb capability restraint, the company maintains a vibrant talent-building pipeline that *constantly develops people through a multi-year training "continuum,"* paired with *tailored content that fits job and rank requirements*. Potential recruits are *screened with respect to growth traits*. Promotion up the ranks is contingent on fulfilling challenging performance goals and nomination-only courses as well as *comprehensive evaluations that gauge performance against prescribed goals and objectives,* adherence to company values, and succession planning. These hiring and promotion screens *revitalize the company's pool of future leadership* through a Darwinian survival-of-the-fittest process that fine-combs the workforce, diminishing capability restraint by separating the high achievers from the rest and weeding out undesirable behavioral norms.

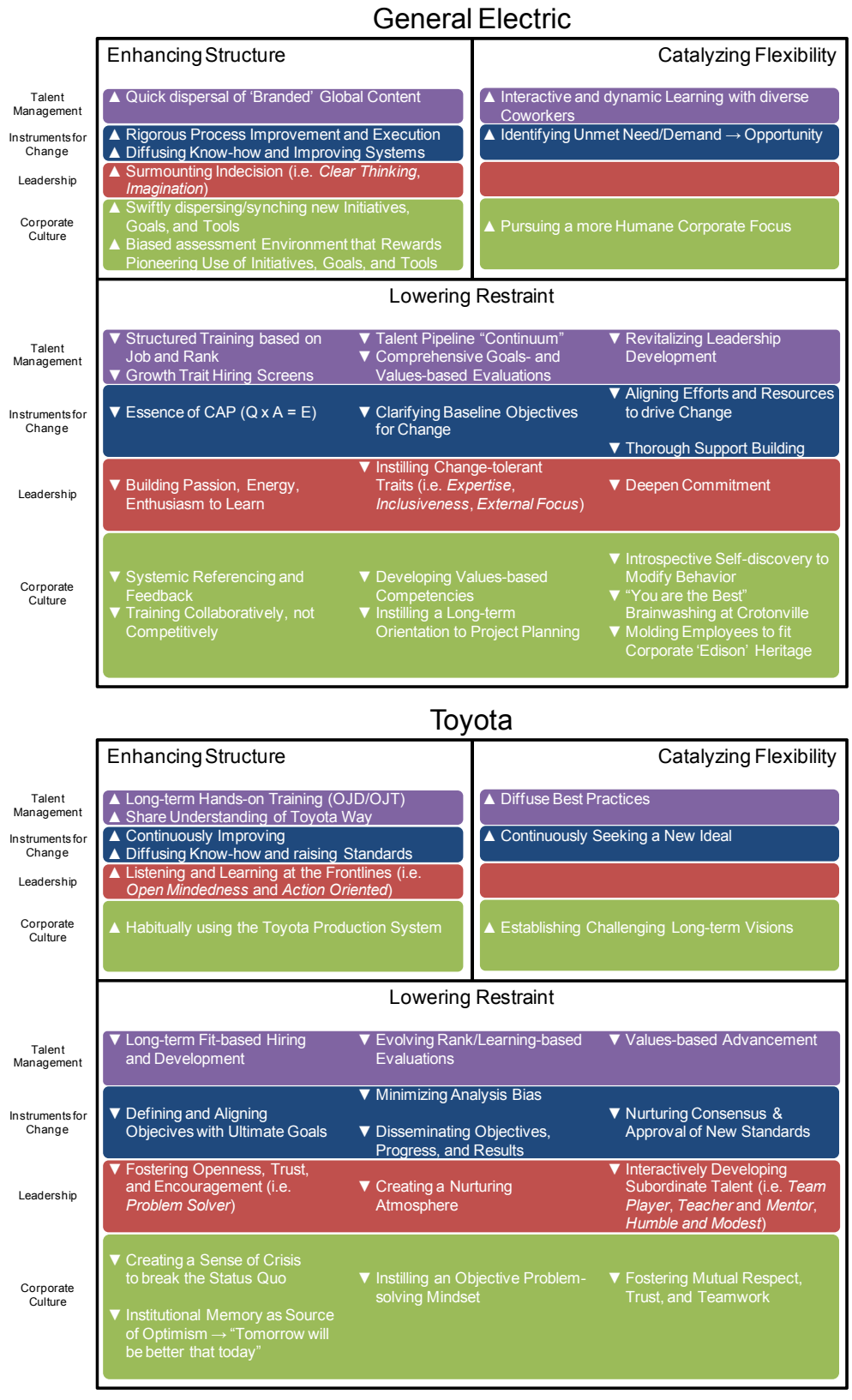


Figure 7-1. The 'Ecologies' of Capability Accretion in General Electric (top) and Toyota (bottom).

Note. The organizational layers are indicated along the left column. Created by author.

Talent management at Toyota strives to deepen understanding and conformance to core company values, longstanding practices, and know-how that, combined, promote acceptance to capability-imparting change. *Employee training is almost exclusively hands-on*, following an on-the-job approach that slowly inculcates practices and values through mentored job rotations and apprenticeships that span years. Organizational coherence and capability increase as employees *share understanding of the Toyota Way*, conform to improvement-driven protocols that promote change, and *diffuse best practices* to others in the company's ecosystem (e.g. production centers, sales offices, distributors, dealers). Employee hiring *increases organizational fit through long qualification periods* that span years and are paired with instruction that is tailored according to ability and task relevance. Performance *evaluations rely on learning-based criteria that vary with rank and responsibility* and stress conformity to company values as well as process, not just result. *Promotions also depend on adherence to company values* as demonstrated in project-driven coursework that is primarily hands-on, lowering the restraint to capability development by keeping Toyota Way values alive through shared practices and norms that reinforce their everyday relevance.

Instruments for Change Layer

The most significant aspect of the instruments for change at General Electric is their emphasis on *enhancing project effectiveness* (E) *by increasing the quality* (Q) *and acceptance* (A) of change initiatives (i.e. Q x A = E). From the perspective of capability accretion, this is all about lowering restraint to change in people in three ways: 1) by *clarifying baseline objectives*, 2) by *aligning efforts and resources to drive change*, and 3) by *thoroughly building support for change*. Structured change is driven by *rigorous process improvements*, such as the waste-reducing lean six sigma projects, or from the exploration, creation, and execution of viable options using process frameworks such as A+CEC or CECOR. More

importantly, structured enhancements benefit from the *diffusion of know-how and system improvements*, a process reinforced by the acceptance- and support-building Change Acceleration Process. Other tools, such as the Net Promoter Score, help *identify exploitable opportunities for unmet needs and demand* that advance flexible change, although the uncertainty surrounding the recognition of true market demand limits this potential.

At Toyota, the instruments that drive change all point in the same direction – towards *the continuous seeking of new ideals* that raise standards and capability to ever higher levels. The organization's structured side is fortified by the disciplines of *continuous process improvement* (e.g. TPS, Kaizen) and *diffusion of know-how and best practices*. In turn, elevated standards become the new baseline for improvement, raising the prospects for eventual sweeping changes that catalyze flexibility. These improvement-focused disciplines also lower restraint to change. This begins at the onset of a project, when *process improvement objectives and targets are defined and aligned with the ultimate goals* that drive company growth. These objectives guide the problem-solving effort, pairing the *fact-driven bias-diminishing scrutiny of root causes* (e.g. asking "why" five times) with the *dissemination of project objectives, progress, and result to constituents* affected by the change initiative (e.g. mieruka, A3 Reports). Finally, dispersing information on project purpose and progress facilitates *the consensus-driven approval process*, or nemawashi, and the *sharing of new standards* through yokoten. This is especially the case when project champions have taken care to involve key decision makers with the change process during its early stages.

Leadership Layer

The ideal leadership at General Electric builds capability in the organization in two ways: 1) by *surmounting uncertainty in decision-making and strategy execution* and 2) by *instilling commitment, passion, and enthusiasm to learn* and carry out projects to the end.

Overcoming uncertainty and indecision improves execution ability, helping to avoid missing the window-of-opportunity for projects. Decision and execution acumen is drilled into managers through intense project management training and review sessions that instill the company growth traits of *clear thinking* (to distill complexity into actionable strategies) and *imagination* (to take risks and being open to change). Leaders are instructed in ways to foster in others the passion, energy, and enthusiasm to learn and grow. Specific skills include crafting project statements that align efforts, facilitating intra-team dynamics, using values-based evaluations that encourage conformance with leadership growth traits, overseeing successor development, and building influence to achieve long-term growth. These types of initiative initiatives lower the restraint to capability development and inspire the traits of *expertise*, *inclusiveness*, and *external focus* that encourage learning in an engaged, inspiring, and respectful manner and deepen commitment to carry out projects that take time to yield results.

Leadership at Toyota centers on the relentless pursuit of solutions, openness/trust, and talent. *Listening to, and learning from, alternative viewpoints at the frontlines* serves as the springboard for problem-solving solutions; a fix-it orientation that drives structured change and capability development through the habits of *open mindedness* (to think from varied and long-term perspectives) and *action oriented* (to constantly search for a better way). Problem solving at the frontlines benefits from an open and trusting work environment, where leaders diminish the restraint to capability-imparting change by encouraging others to be *problem solvers* willing to take risks and translate ideas into action. Another way that Toyota leaders diminish capability restraint is by *interactively developing subordinate talent* in a *nurturing environment where experience is viewed as the true source of know-how*, realistic objectives and delegation foster accomplishment and accountability, failures are transformed into learning opportunities, and everyone learns from each other. This requires *humility and*

modesty on the part of leaders to acknowledge personal shortcomings, capability limits, and development need to enable mutual learning alongside subordinates as they take on the roles of *team player* and *teacher/mentor*.

Corporate Culture Layer

Structured and flexible change at General Electric stems from a strong organizational culture that *swiftly aligns employee performance with company objectives*, such as a more humane corporate focus. This rapidness is attributable to the *biased assessment environment* where demonstrated mastery of up-to-date business skills is highly regarded in performance reviews, promoting the quick adoption of the latest tools by those seeking to boost their performance profile. This eventually pressures others to follow suit. Restraint to capability accretion is reduced through a *casual yet systemic referencing and feedback system* that looks at both individual and collaborative performance; a focus reflecting the company values of growth through creativity, imagination, team-oriented problem solving, engaged leadership, and a committed long-term outlook. Employee training is also geared towards *collaboration, not competition*, with *performance evaluations that look at demonstrated adherence and embodiment of values-based competencies*, not just specific goals and objectives. This training includes various *personality and behavior assessments to improve interpersonal, communication, and leadership skills*. In addition, the company *showers praise on star performers*, infusing them with the celebrated *'Edisonian' heritage* of leading change, never reacting to it.

The corporate culture at Toyota catalyzes flexible change by *pursuing challenging long-term visions* directly linked to the company's future survival, such as environmental issues, that *instill a sense of crisis in the organization*. To offset this demanding state of affairs, the company culture also *instills in employees the optimism that "tomorrow will be a better day" borne from a heritage of enduring past hardships*; an optimistic mindset that

helps people cope with the reluctance and doubt that arises from the daily pursuit of challenging visions, channeling the sense of crisis into a source of power to persevere and overcome the difficulties that lie ahead. Structured change is enhanced by *the continuous improvement of existing practices*, epitomized by the Toyota Production System, a key part of the *problem-solving mindset* in the company. Put simply, there are two sides to TPS – the action (stop the process), and the attitude (admit a mistake). This combination erodes organizational restraint to change by fostering *group-oriented norms that promote mutual respect, trust, and teamwork*. Correspondingly, praise for a job well done is reserved only for exemplary team effort, not individual performance. Other restraint-reducing norms and practices include treating dealers as partners and getting employees to believe in the "power as a team."

Capability Accretion Pitfalls

It is worth noting that the 'ecologies' of capability accretion in General Electric and Toyota are not exactly ideal. Each has its own set of issues, pointed out in the conclusions of Chapters 3 to 6 and summarized here, which negatively impact the accretion of capability. For example, the performance evaluation at General Electric that gauges conformance and adherence to company values is susceptible to manipulation. So should one person benefit, it is usually at the expense of another, engendering resentment among employees that increases restraint to change in the organization. Other issues that slow or restrain capability development or sow restraint to change at General Electric include:

- Shifting evaluation criteria, sowing uncertainty in a workforce accustomed to appraisals based on measurable and quantifiable metrics, leading to inconsistent performance evaluations.
- Prioritizing/aligning stakeholder needs based on difficult-to-teach judgment on the part of project champions and team members.

- Relying on conflict mediation to side-step issues holding back project support or approval.
- Increased aversion to practice abandonment as employees cope with a growing array of evolving tools and methods in their daily routines.
- Drained management resources as it compensates for the substantial loss of talent stemming from high workforce turnover.

At Toyota, the strict and premeditated career paths that confine promotions to two independent tracks – shop floor and office – limit the prospects for growth among those whose expertise could be more effectively used elsewhere, restraining the capability potential of the organization. Other issues affecting capability development at the firm are:

- Delayed decision making and problem solving due to very thorough issue analysis and prioritization as well as a lengthy approval process.
- Context-specific expertise that leads practitioners to favor certain processes over others based on local needs.
- Localized decision-making and initiatives that give rise to process standard variations and incompatibilities that inhibit adoption of best practices developed elsewhere in the organization.
- Training that emphasizes team development at the expense of individual need, restraining development of those whose latent talent exceeds that of fellow peers.
- The unchecked spread of counterproductive thinking, such as the notion that "existing ways always prevail in the end," undermine the motivation to overcome difficult challenges and embrace change.

There is a common underlying them across all of these issues, namely the predilection to avoid 'unfreezing' the 'old' constraining ways or to acquire and embrace the 'new' ways. This is a critical issue with respect to capability accretion, because even small moves in favor of maintaining outdated methods rather than changing or abandoning them has the potential to dislodge the organization into a spiral of stagnant capability growth and decline. Consequently, General Electric and Toyota would be wise to nip each one in the bud before they swell into unwieldy tribulations that derail capability development years down the line.

7.2 The New 'Moon Shots' of 21st Century Talent

As described in Chapter 1, the ultimate aim of the talent 'Moon Shots' is to push the limits of superior and sustainable company growth by cultivating the capability in organizations and in people to manage the uncertainties of a volatile 21st century. Consequently, the lack of a 'Moon Shot' talent development program represents an insurmountable competitive Achilles heel. Without it companies are at risk from failing to nurture the talent needed to overcome the 'grand' challenges of management and break the capability-diminishing calcification of existing practices in their organization, systems, and people.

The four ideal 'Moon Shots' of talent development introduced in Chapter 1 include: 1) erecting the infrastructure to pick out diamonds from the rough, polish them to a sparkle, make them shine, and keep their luster from fading, 2) outfitting people with the practices, methods, and tools needed to make change happen, 3) developing leaders who champion change by observing, listening, and learning alongside others, and 4) cultivating the mindset of performing cooperatively and collaboratively, with respect and trust.

It is my contention that this list is incomplete, and several new 'Moon Shots' are implied in the 'ecologies' comparative of General Electric and Toyota. The rest of this section is devoted to describing these complementary 'Moon Shots' of 21st century talent.

Moon Shot 1 – Talent Management:

Develop Talent by Exposing People to New and Reinvigorating Experiences

Many companies do not fare so well developing and managing employees because they fail to provide the fresh opportunities that allow people to continue growing as experience and capability deepen. Nurturing employees requires a persistent and flexible approach to human resource development, with training purposefully delivered along two trajectories: vertically to disperse transferable skills and horizontally to provide training corresponding to assessed needs based on experience, capability, and responsibility.

For example, to invigorate leadership potential, General Electric puts employees through an experience-building program that provides challenging job assignments, ample opportunities to exceed stretch goals, high visibility of progress and accountability, candid and frequent assessment and feedback, and developmental training corresponding to need.

At Toyota, training exposes people to new experiences by combining classroom-based instruction with on-the-job line-side practice that varies based on the experience and rank of the trainee. The purpose of this OJT-focus is to ensure that people capably apply and cultivate Toyota Way standards in everyday operations; a practice expected of all employees regardless of their job function or position in the organization.

Moon Shot 2 – Talent Management:

Manipulate the Talent-building Levers of Create, Cascade, and Screen

The three levers for the large-scale development of talent in the knowledge age, where success depends on employee capability and the continuous upgrading of skills, are: 1) creating a system that integrates training, experience building, and succession planning, 2) cascading learning across the organization with an across-the-board approach to employee development that reinforces core company practices and values, and 3) strict screening of personnel to get those who are predisposed to the company's core values into key positions.

General Electric and Toyota manipulate the three levers to fuse learning, experience building, and adherence to company values into a 'Moon Shot' paradigm of talent development. Specifically, both companies have integrated training infrastructures that blend experience-building job rotations with formal training to support growth at every career stage, and are distinguished by an unwavering commitment to the long-term and rigorously-assessed development of employees.

Moon Shot 3 – Instruments for Change:

Equip the Tools to Adroitly address Opposing Demand

Companies that actively embrace and resolve opposing aims and conflicting demand push away from the comfort zone and instill a healthy dose of instability and tension in the organization that stimulates change and innovation. This instability catalyzes the synthesis of new solutions beyond opposing traits by continuously pursuing change and self-renewal. This requires people to have the tools that harness change and transform opposing demands into concrete and implementable solutions, in the process energizing the organization and people to higher levels of capability and performance.

At General Electric, innovation and growth are driven by a commercial ecosystem primed to deliver efficient, expedient, and expansive change i.e. the concerted and timely delivery of unsurpassed value to ever more discriminating and diverse customers. The growth-oriented tools that guide strategic innovation establish a unique corporate dialect that reinforces organizational understanding of marketing initiatives and facilitates communication of business goals. These tools include the commitment-building Change Acceleration Process, the rigorous cost-reducing Six Sigma approach to business improvement, the A+CEC strategy execution framework, and the customer-focused Net Promoter Score.

Progress at Toyota is driven by a process-improvement approach that relies on problem-solving skills, a critical capability implanted in employees early in their careers through intensive and constant training. This approach is epitomized by the Toyota Business Practices standard, an eight-step process-improvement method that has three basic functions: 1) apply effective problem-solving methods to improve existing standards, 2) expand understanding of the problem-solving process by visualizing it (using mieruka, obeyas, and A3 reports), and 3) establish support for improvement initiatives through nemawashi (to build project approval) and yokoten (to share best practices and elevate standard levels).

Moon Shot 4 – Instruments for Change:

Let People Drive Change from Start to Finish

Companies often fail to improve not because of an unawareness of the need for change, but from the inability of employees to fully carry out those projects that make change happen. This requires an approach to change that project champions can control from beginning to end in order to identify, refine, rally support, and implement the initiatives that drive change and fuel growth.

The change processes in General Electric and Toyota both devote significant effort laying the initial groundwork for change-driving initiatives, meticulously identifying and clarifying their purpose and objectives (e.g. the A+CEC steps of *Appraise* and *Calibrate* and CAP steps of *Leading Change* and *Creating a Shared Need*, or the TBP steps of *Clarify the Problem* and *Break down the Problem*). This foundation pays dividends in later stages, when support has to be rallied, objectives that align with company goals refined, and buy-in from key constituents sought. As with the initial groundwork, both companies also devote significant effort during this critical project-approval phase, using tools like project charters and the CAP steps of *Shaping a Vision* and *Mobilizing Commitment*, or processes to visualize progress and build approval (e.g. mieruka, nemawashi). Most importantly, once a project has

been carried out, ensuing results and improvements are institutionalized and shared (either through the CAP step of *Changing Systems and Structures* or the final TBP step of *Standardize Successful Processes* in combination with best-practice sharing through *yokoten*) to elevate existing standards and develop new capability in the organization while curtailing needless and wasteful reinvention of the wheel.

Moon Shot 5 – Leadership:

Nurture the Change-tolerant Traits of Three-way Leadership

According to Dr. Noel Tichy, the imperative of 'good' leader is the commitment to learn and to develop leadership judgment in others; a commitment characterized by the self-confidence to teach and the humility to learn. This requires three-way leadership – a participative approach that sets the stage for interactive learning through observation and soliciting of opinion in a give-and-take manner that transforms pupil into teacher and vice versa.

The five "must have" traits at General Electric to nurture customer-centric, change-focused, learning-driven three-way leaders are: 1) *external focus* to define success from the customer's perspective, 2) *clear thinker* to distill complexity into simple and actionable strategies, 3) *imagination* to seek creativity, take risks, and change, 4) *inclusiveness* to engage and inspire others to higher levels of performance and recognize their contribution, and 5) *expertise* to build acumen by continuously learning through hands-on experience.

The six Toyota traits that transform people from accomplished problem solvers to teachers and mentors capable of instilling process improvement acumen and Toyota values in others include: 1) *open mindedness* to listen, learn, and think from multiple perspectives with a long-term view, 2) *problem solver* who resolves issues at the source and translate ideas into action, 3) *team player* who allows others to develop, grow, and flourish, 4) *action oriented* to quickly solve problems and constantly search of a better way, 5) *teacher and mentor* who

stimulates creative thinking in others and instills company values, and 6) *humble and modest* to keep learning and acknowledge the effort of others.

Moon Shot 6 – Leadership:

Develop Leaders and Subordinates Interactively

Interactive learning requires intense commitment and frank engagement between instructors and pupils as both sides tackle professional and personal issues that promote mutual development and growth. Former Chairman and CEO of PepsiCo Roger Enrico outlined the six base ingredients for effectively leader development: 1) having a teachable perspective that creates change and grows the business 2) committing one-half to one-third of a leader's time towards developing others, 3) being a vulnerable mentor who admits mistakes and is open to new ideas, 4) using real business projects that create real impact, 5) blending soft (people) and hard (business) issues, and 6) energizing others by encouraging risk taking and experiential learning.

At General Electric, interactive leadership is nurtured through tiered training that emphasizes self-discovery, individual development, and team-building. Core instruction includes the Leadership, Innovation, and Growth program focusing on long-term project engagement, the Experienced Commercial Leadership Program that instills business strategy and execution acumen, and the Global Leadership Course to develop team management and facilitation skills, among others.

Toyota develops interactive leaders through learning-by-doing and delegation in an energizing and invigorating environment, where achievement of difficult yet realistic objectives instill a sense of accomplishment and mistakes committed in the pursuit of challenging goals transform into learning opportunities. This requires confidence on the part of leaders to trust in the ability of others to find solutions, and motivation on the part of subordinates to learn and grow on their own.

Moon Shot 7 – Corporate Culture:

Create Value by Instilling an External Focus

Values that emphasize a myopic internal orientation, such as a dedicated pursuit of scale, efficiency, and productivity, foster a 'red ocean' mindset where victory depends on having the largest market share, the lowest cost, or both; a beat-the-competition approach to business that neglects the needs of customers and rarely creates sustainable value for stakeholders. By contrast, externally-focused values promote a 'blue ocean' outlook to business where success comes from creating and harvesting new businesses and markets, eventually creating new value that is shared among the stakeholders.

The externally-focused values (in italics) at General Electric are shaped around four core actions (in bold): *curiosity* and *passion* to **imagine** new ways to work for customers, people, and communities; *resourcefulness* and *accountability* to **solve** some of the world's toughest problems; *teamwork* and *commitment* to **build** a performance culture that grows markets, people, and shareholder value; *openness* and *energy* to **lead** through learning, inclusiveness, and change.

The five externally-focused values that define the Toyota's corporate culture, each one stemming from *The Toyota Way 2001* core pillars of "continuous improvement" and "respect for people," are: c*hallenge* the organization with long-term visions; establish a *kaizen* mindset of continuous improvement; practice *genchi genbutsu* to see things firsthand; *respect* people and their capabilities to contribute; and *teamwork* to cultivate personal and professional growth.

Moon Shot 8 – Corporate Culture:

Align Individual Efforts to Drive Organizational Change

There are two benefits to clearly communication and systematically synchronizing the efforts of individuals across an organization. The first is that it minimizes activity overlaps

among dispersed contributors that would otherwise lead to wasteful reinvention of the wheel. The second is that it allows people to change and realign their activities in response to unexpected change, just like a school of many small fish darts out of the way when threatened by a larger predator.

The General Electric organization can change quickly. In March of 2003, the same year CEO Immelt changed the company's values, he also revised the way businesses would be evaluated. In other words, when the goals of the game change at the top, the rest of the General Electric organization followed suit. The mechanism driving this organizational realignment were the frequent performance reviews that positively rated the pioneering use of the tools promoted by headquarters. In a performance-driven environment like at General Electric, this prompts high-performers to quickly learn and use the latest tools, leading to new standards that others soon follow or else risk being left behind.

At Toyota, alignment is achieved through genchi genbutsu, the exposing of root causes to issues through on-site observation, investigation, and inquiry. This practice encourages people "to see things firsthand," to search with their own eyes, and to solve problems with their own hands. Effective genchi genbutsu requires collaboration. For example, to maintain close relationships with dealers, Toyota managers visit them frequently, hear their views, ask for their input, and ensure they are involved in key decision-making processes. Another practice that fosters alignment is jidoka, the act of stopping a process when a problem occurs. This grants individuals the authority to stop an entire production line so others can help resolve the problem as a team, requiring an atmosphere of mutual trust and respect that encourages people to openly admit mistakes.

7.3 Conclusion

The unified 'ecologies' of capability accretion presented in this chapter are not unlike the traditional Rorschach test of perception, which distills the complexities of individual

personality by analyzing a person's unique interpretation of an ink-blotted page. Likewise, the 'ecologies' in General Electric and Toyota, shown in Figure 7-1, represent complex and unique images of capability accretion. And like the Rorschach test, where results correspond only to the individual in question, perceiving the utility of the distinct 'ecologies' with respect to capability development in other different companies is not easy. Despite this difficulty, there are three lessons that can be drawn from this analysis of General Electric and Toyota that those seeking to develop capability in their firms should consider:

- **Restraint is the single biggest hurdle in the way of institutionalizing change.** As a rule of thumb, for every change initiative there must be at least one, preferably two, initiatives that address a related restraint. This reinforces the notion, from Chapter 2, that *the lower the restraint to change, the more effective and intense the accretion of capability*.
- **Flexible change is difficult to sustain, much less pioneer.** More an outcome than an aim, flexible change should not be a goal in of itself, but an aspiration that evolves over time as other structured, restraint lowering endeavors build the fundamental capability needed to develop the flexible side of the organization.
- **Abandoning talent-building endeavors in response to unexpected change lowers long-term performance.** Nurturing capability to its fullest potential requires time, effort, and most importantly, patience. There are no shortcuts. General Electric's training program follows a long-term outlook that spans many years, regardless of the ups and downs of the market. Executives invest a minimum of 12 months in training and development over a 15-year period, and career paths are defined by prolonged and varied appointments. Likewise, future Toyota executive are developed gradually through successive job rotations and apprenticeships that span decades, with advancement coordinated through strict

selection screens and information on potential candidates shared across the organization.

These three lessons are reminiscent of Benjamin Franklin's notion that mankind is divided into three classes: those who are *immovable*, those who are *movable*, and those who *move*. Rephrased in the parlance of capability accretion, Franklin's three classes then represent restraint, change, and capability, respectively: people are immovable because *restraint* glues them in place; people are movable because they embrace *change*; and people continue to move because their *capability* spirals to higher and higher levels of performance.

This study on corporate training and leadership development at General Electric and Toyota thus brings to light the key ingredients for companies to transform the *immovable* potential in their organization, systems, and people into *moving* performance: the 'Moon Shots' of 21st century talent.

Appendix A – Instruments for Change

Figure A-1. The Six-part General Electric Growth Process.

Note. Embedded in the center of the process are the tools to drive efficient, expedient, and expansive growth: Change Acceleration Process, Six Sigma, the A+CEC strategic execution framework, and the Net Promoter Score. Six-part process adapted from General Electric (2007b: 7). Concept of expedient, efficient, and expansive growth developed by author.

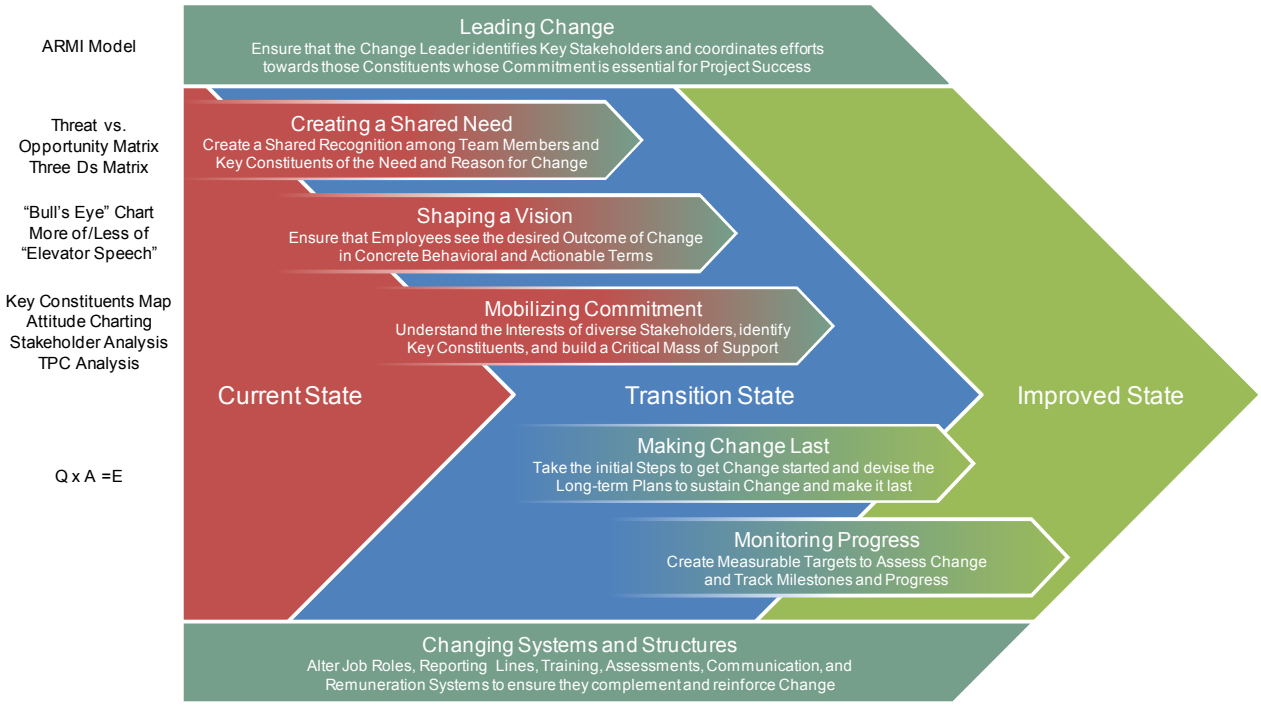


Figure A-2. The Seven-step Change Acceleration Process.

Note. Starting with efforts to lead change (the first step at the top), each subsequent step moves the organization from its current state (on the left) through a transition (middle) and towards an improved state (on the right), where alterations to organizational systems and structures (the final step at the bottom) reinforces and sustains change. The CAP-specific tools used in each step are listed along the left side of the framework. Adapted from General Electric (2007b: 81), Garvin (2000: 127), and interview notes.

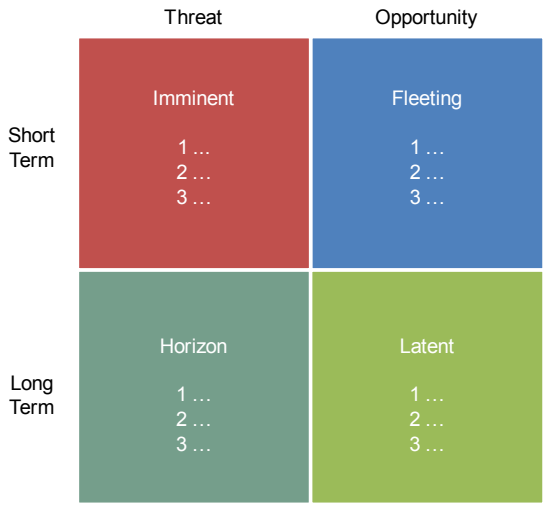


Figure A-3. The Threat versus Opportunity Matrix.

Note. A part of the *Creating a Shared Vision* step in CAP to outline the short- and long-term challenges ('imminent' or 'horizon' threats) and benefits ('fleeting' or 'latent' opportunities) that can be derived from a change initiative. Adapted from General Electric, 2007b: 84.

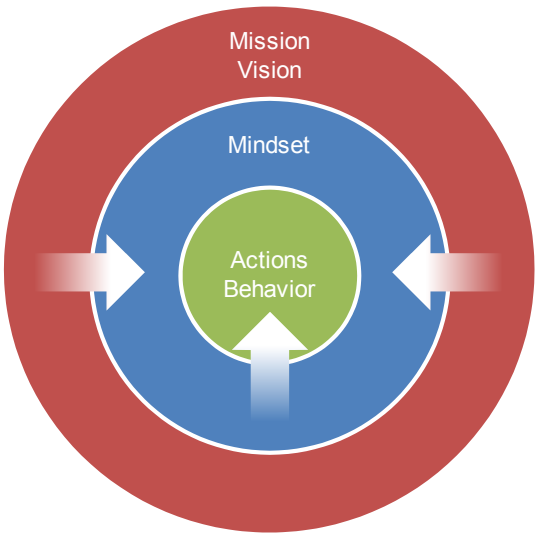
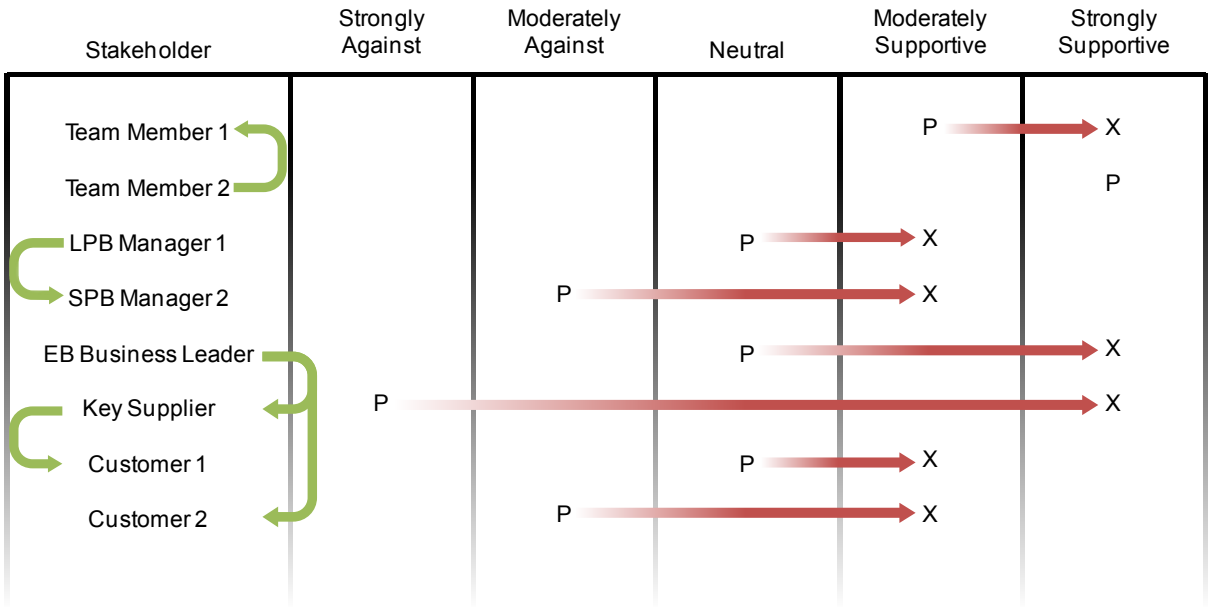


Figure A-4. The "Bull's Eye" Chart.

Note. A part of the *Shaping a Vision* step in CAP to conceptualize visions that are stated in actionable and behavioral terms. Adapted from General Electric, 2007b: 122.



Step 1. Plot where each stakeholder is currently with regards to desired change, marking with a 'P' the position of each stakeholder.

Step 2. Plot where stakeholders need to be (indicate with an 'X' the desired position) in order to successfully accomplish the desired outcome. Identify gaps (right-pointing arrows) between current and desired.

Step 3. Show how stakeholders link to each other, using (half-looped) arrows to indicate directions of influence i.e. who influences whom.

Step 4. Plan corrective steps to close the gaps.

Figure A-5. The Stakeholder Analysis for Change.

Note. A four-step process used in the *Mobilizing Commitment* step of CAP to identify, assess, and plug commitment gaps among the key stakeholders involved in the change initiative. Adapted from General Electric, 2007b: 148.

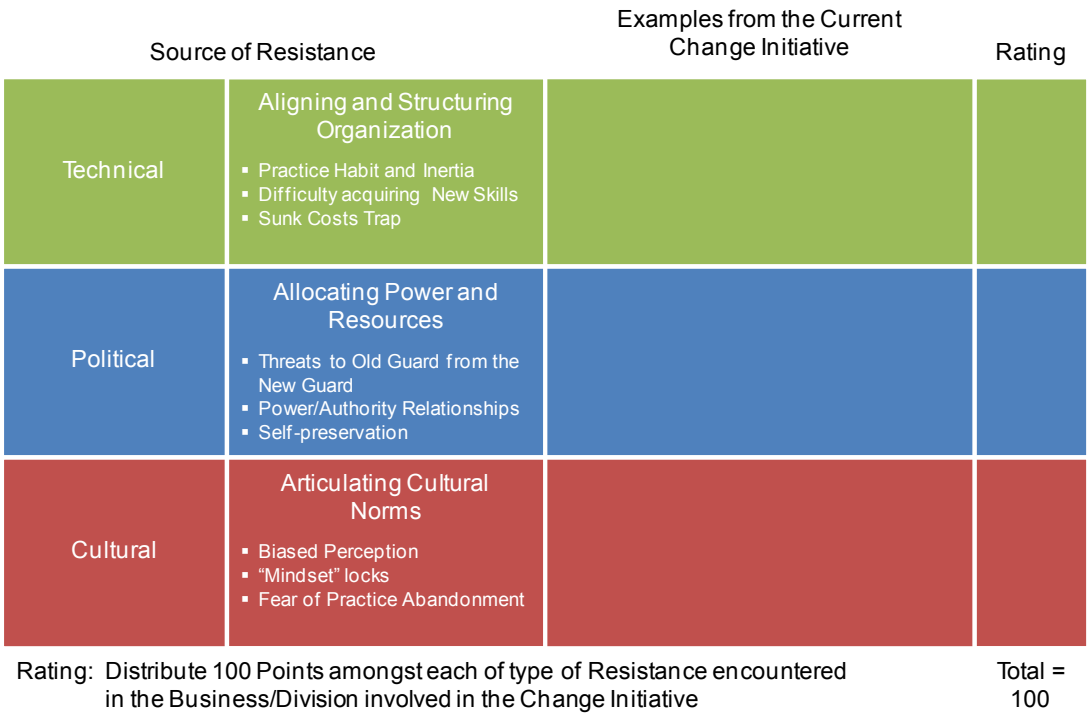


Figure A-6. The TPC Analysis.

Note. A tool used in the *Mobilizing Commitment* step of CAP to pinpoint, characterize, and discern sources of technical, political, or cultural resistance to change. Adapted from General Electric, 2007b: 149.

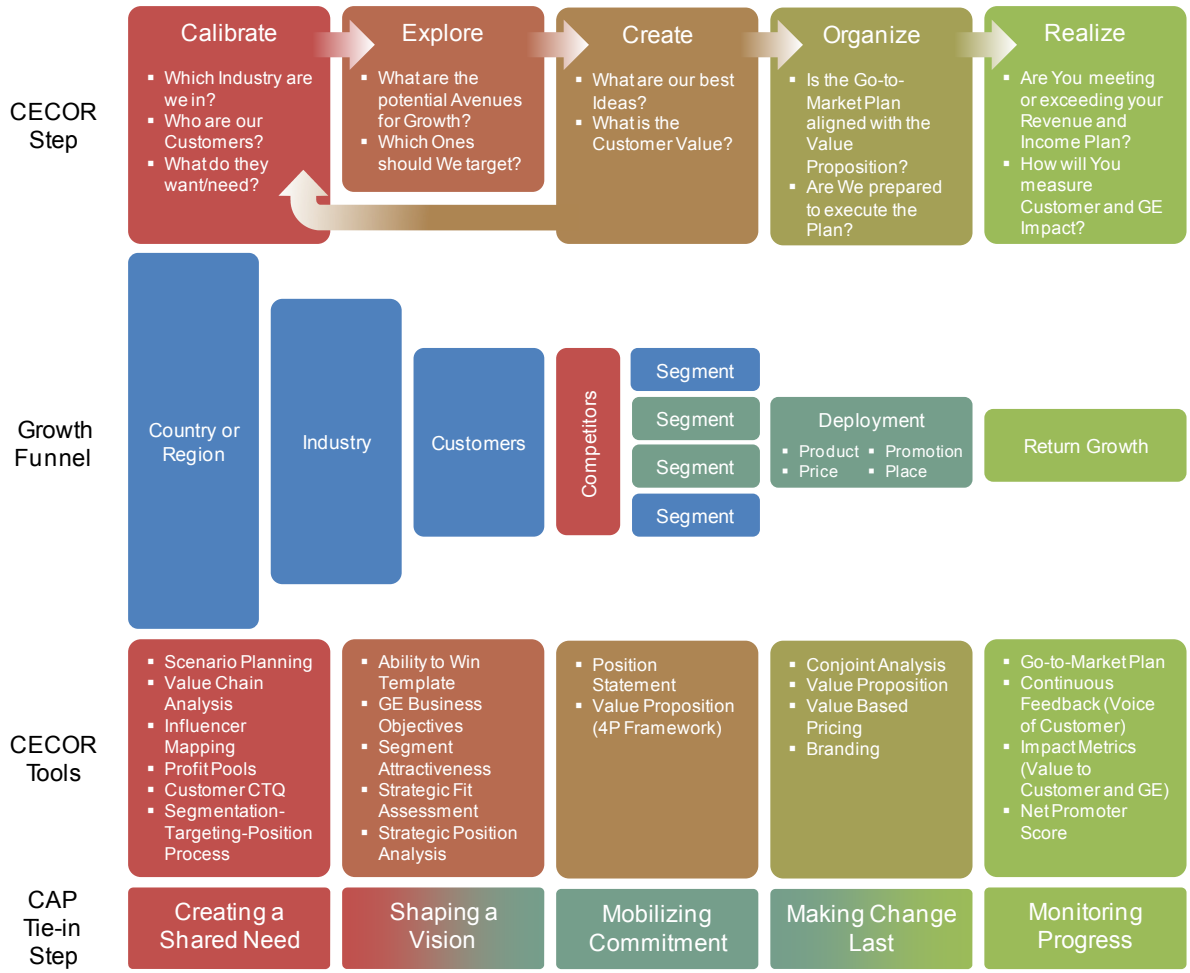
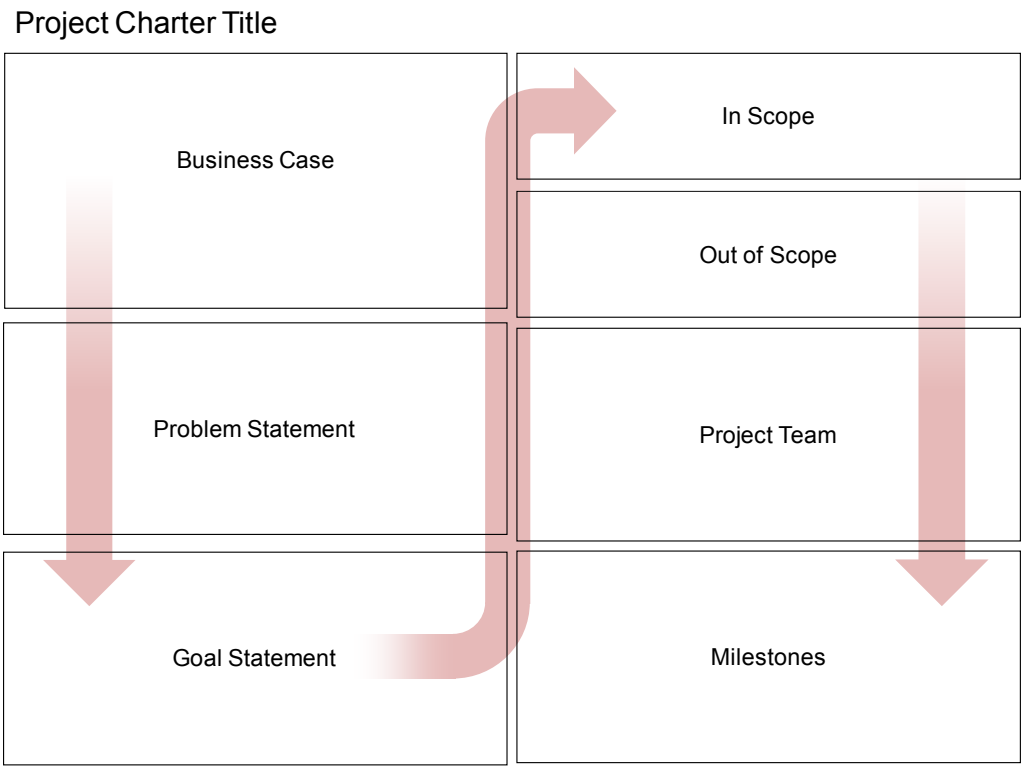


Figure A-7. The CECOR Multi-level Planning Model.

Note. The growth funnel for a project is refined using a question-based approach and analysis tools to progressively narrow the project's scope at each step of the process. Progression through the CECOR steps is linked to the Change Acceleration Process (indicated by the tie-in steps at the bottom). Adapted from General Electric (2007b: 2-3) and interview notes.



Project Charter Pan-European Global Sourcing

Business Case:
GE Fleet has initiated a Pan-European strategy to effectively respond to multi-nationals' need for global sourcing. In April 2004, a pilot European Bid Desk was created to address Pan-European requests for inquiries/quotes, resulting in increased deal wins across Europe:

	2004 (12 Mo.)	2005 (7 Mo.)
Number of deals won:	4	10
Potential Customer Fleet:	9300	14900

Converting deal awards into firm orders is critical for revenue growth. This builds the case to better structure the phase between "award" and "order."

Problem Statement:

Current implementations for Tyco, Bayer, and Akzo Nobel show that difficulties exist converting awards into orders. A lengthy process and longer-than-promised deployment durations both contribute to order delays. In 59 percent of cases, promised durations to the customer were missed.

Goal Statement:

-Reduce award cycle time from 30 to 12 days

-Increase process reliability by increasing deal approvals within target time frames from 59 percent to 90 percent by February 2006

In Scope:

- Pan-European GE Sales Centers
- Pan-European Key Accounts
- Key Component/3P Logistic Suppliers
- PE A Sales Team

Out of Scope:

- Legal and Credit Approval Process
- Key Solutions Study Process
- Local Platform Implementation Process

Project Team:

- Champion
- Marketing Leader
- Sponsor
- Project Leader

Milestones:

Appraise	September 15, 20XX
Calibrate	October 15, 20XX
Explore	October 31, 20XX
Create	November 30, 20XX

Figure A-8. The Project Charter (top) and A+CEC Training Example (bottom).

Note. Arrows (top) indicate the information flow, starting from Business Case on through to the Project Milestones. Adapted from General Electric, 2007b: 36-37.

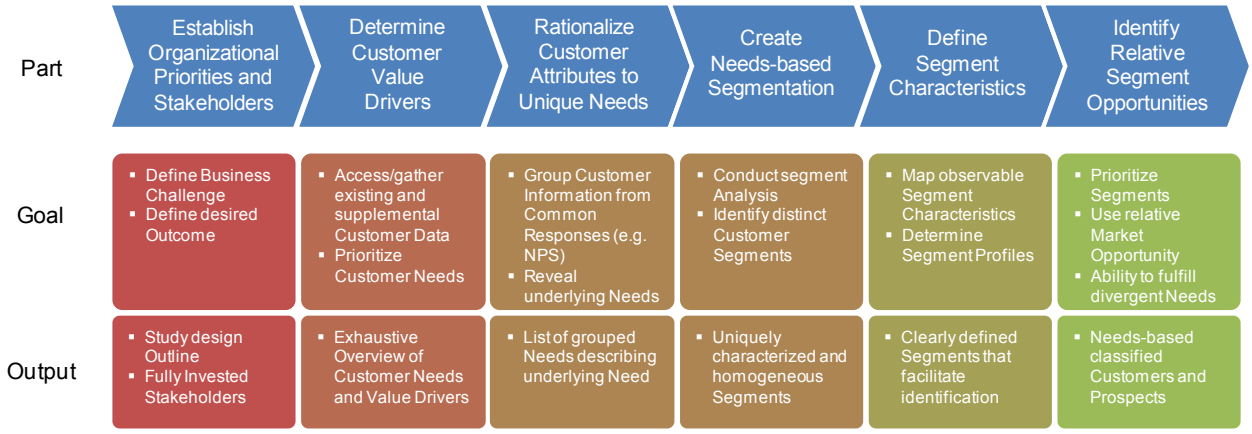


Figure A-9. The Needs-based Segmentation Method.

Note. Adapted from General Electric, 2007b: 78.

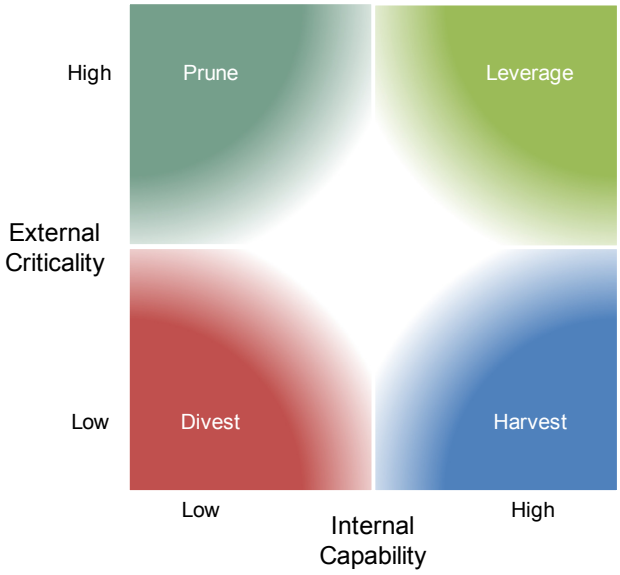


Figure A-10. The Capability and Criticality Matrix.

Note. Adapted from General Electric, 2007b: 105.

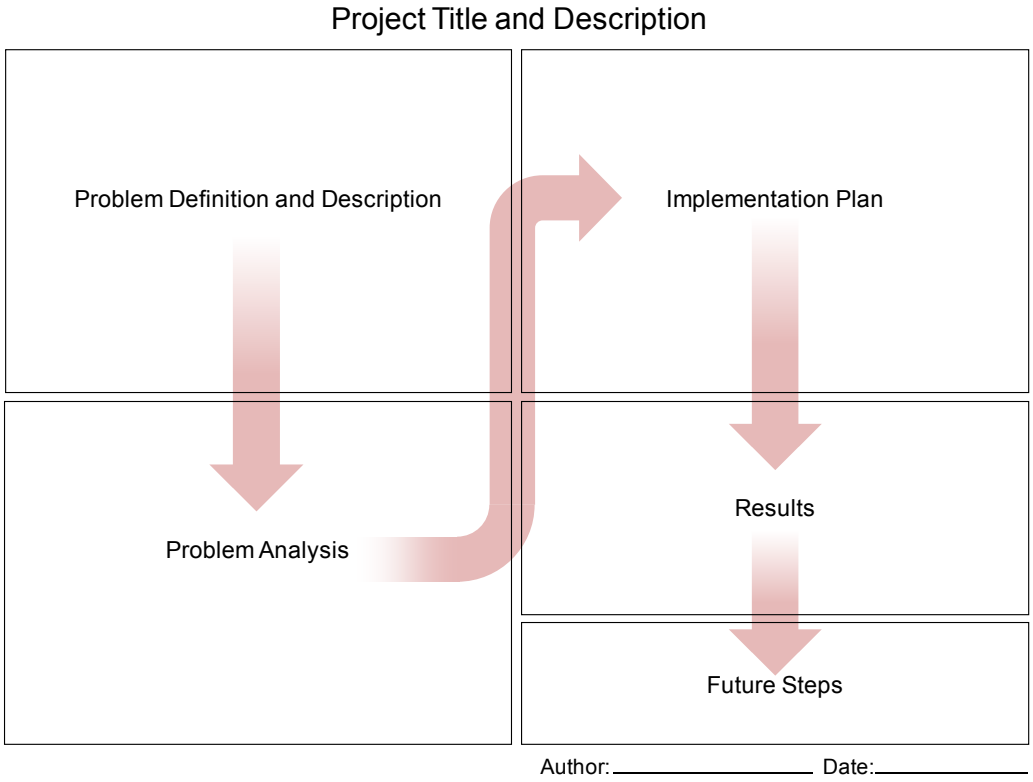


Figure A-11. The Information Flow and Structure of the A3 Report.

Note. Adapted from Liker & Meier, 2006: 381.

Appendix B – The Change Acceleration Process

The next five sections describe the key CAP steps that lead, create, shape, and mobilize change, focusing on their purpose, importance to the overall process, the tools used, the assessment criteria that track progress and success, and the potential pitfalls that can derail the process.

Leading Change

The first step in CAP is an important phase at the beginning of a change initiative during which project champions must carefully identify the relevant stakeholders who are, or will eventually be, involved in the process of leading change.

For this, General Electric managers use the *ARMI Model*, a table that categorizes the evolving function of each faction involved in the change initiative by classifying their role during each step of the process as one of four types: 1) a source of *Approval* of decisions outside existing lines of authority (i.e. sponsors, business leaders); 2) a *Resource* possessing exploitable expertise, skills, or clout; 3) a *Member* authorized to execute within the project's defined scope; 4) an *Interested* party that must be apprised of project direction and progress to ensure their forthcoming support down the line (General Electric, 2007b: 39). Efforts can then be coordinated to win the commitment of those individuals and/or groups whose participation is essential to secure a successful change initiative.

Creating a Shared Need

In the second step of CAP, project champions attempt to build a shared recognition amongst team members and key constituents of the need and logic for change, framing it as both a threat and an opportunity. The goal is to foster dissatisfaction with the status quo and overcome the natural resistance and apathy to change in the organization.

To effectively validate a change initiative's importance, convey its criticality to others, and build the momentum needed to launch it, project champions rely on two analysis tools. The first tool is the *Threat versus Opportunity Matrix* that outlines the short- and long-term challenges and benefits that can be derived from the change initiative.[62] The second tool is the *Three Ds Matrix* to build a communicating strategy that conveys the need for change through the *Diagnosis* of data (e.g. internal sources, external networks/clusters), a *Demonstration* of its viability (e.g. best practice sharing, benchmarking, alternative approaches), and a description of the avenues to champion its *Demand* (e.g. leadership paradigms, high conduct standards, leading by example) (Ibid.: 82-83).

Before advancing further in the change process, project champions must first evaluate how extensively and effectively the shared need has become, focusing on the project team members, whose understanding must be aligned with the reasons underpinning the change initiative. This includes being able to produce evidentiary support justifying its cause and delivering a consistent "message" regarding its need to others outside the team. Project champions must also check that the shared need reflects the concerns of key customers and suppliers, clearly articulates the need for change to each party involved, and zeroes in on the key constituencies affected by the initiative (Ibid.: 86).

Shaping a Vision

The third step of CAP focuses on producing a clear statement describing the expected outcomes of the change initiative – a view of the future ideal state that is evolving and not static, implementable, challenging, and, most importantly, easy to understand. Project champions learn that clear and well-articulated visions of the ideal state are essential to build genuine commitment and support that drives behavioral changes that can then be reinforced though the modification of organizational systems and structures (Ibid.: 120).

[62] An example of the Threat versus Opportunity Matrix is shown in Figure A-3 of Appendix A.

The process starts with a *"Bull's Eye" Chart* to develop a vision that is stated in actionable and behavioral terms. Next is a *More of/Less of* exercise to clarify the desired, observable, and measurable behavioral modifications expected of those involved in the change initiative with respect to the needs of each stakeholder affected by the project scope.[63] The final exercise in this step is the *"Elevator Speech"* technique, which drills team members into articulating the need for change and the vision of the future ideal state in a simple, succinct, and eloquent manner, clearly conveying to others "why we doing are this," "why is it important," "what success will look like," and "what is needed" from others to make it work (Ibid.: 122-125).

Assessing how clearly a vision statement for a change initiative is articulated is difficult, and relies heavily on the judgment of the project champion, who must consider diverse aspects such as if the vision simple and straightforward, is it motivating and energizing, and is it shared and understood across the organization. CAP trainers emphasize that unless the project team is aligned around a vision that is clearly expressed in behavioral terms to all stakeholders, the change initiative can derail before it even starts (Ricky Taguchi, personal communication, 2009, April 27). This is because when no effort is made to gain alignment among team members, team members will tend to follow their own version of the vision, making it too weak to foster sufficient engagement, link the need for change with the future ideal state, or clearly reflect the interests and needs of key stakeholders (e.g. customers, supplier) (General Electric, 2007b: 126-127).

Mobilizing Commitment

The fourth step in CAP is the critical juncture in the process that makes or breaks the change initiative. It is in this phase that the all-important coalition of committed support – a critical mass of stakeholders who back the change initiative – must be won-over to keep the

[63] See Figure A-4 in Appendix A for an example of the "Bull's Eye" Chart.

process moving forward (Garvin, 2000: 129). In addition, key influencers have to be persuaded to sponsor the effort and sources of potential resistance clearly identified – influentially critical factors that, if misjudged or overlooked, can ultimately make the difference between project success and failure (Ibid.: 144).

To better understand the stakeholders, build their support, and mobilize their commitment, project teams are trained in the use of *Key Constituents Maps*, a tool to identify and cluster constituents according to their role in the process or operational function within the organization. Another tool is *Attitude Charting*, a method derived from product adoption/diffusion curves (i.e. innovators, lead users, late adopters, resisters), that visually illustrates shifting attitudes towards change over time (Ibid.: 145-146). Yet another tool is the *Stakeholder Analysis for Change*, a four-step process to 1) identify current stakeholders' positions regarding the change initiative (e.g. from strongly supportive to neutral to strongly against), 2) outline where each position should be to accomplish the desired change, 3) isolate gaps between current and desired positions and stakeholder influence links (i.e. who influences whom), and (4) plan corrective actions to close the gaps (Ibid.: 148).

Project teams also learn to perform *TPC Analyses* to pinpoint, characterize, and discern sources of *Technical* (e.g. practice habit and inertia, difficulty acquiring new skills, sunk costs trap), *Political* (e.g. threat of substitution of the old guard by the new guard, imbalanced power/authority relationships, self-preservation), or *Cultural* (e.g. biased perception, "mindset" locks, fear of practice abandonment) resistance to change. This information then feeds the formulation of containment strategy to mitigate each source of resistance that keeps support from reaching the critical mass needed to keep the change moving in the right direction (Ibid.: 149).[64]

[64] The four-step Stakeholder Analysis for Change and TCP Analysis are illustrated in Figures A-5 and A-6, respectively, in Appendix A.

Appendix C – Employee Development Tools

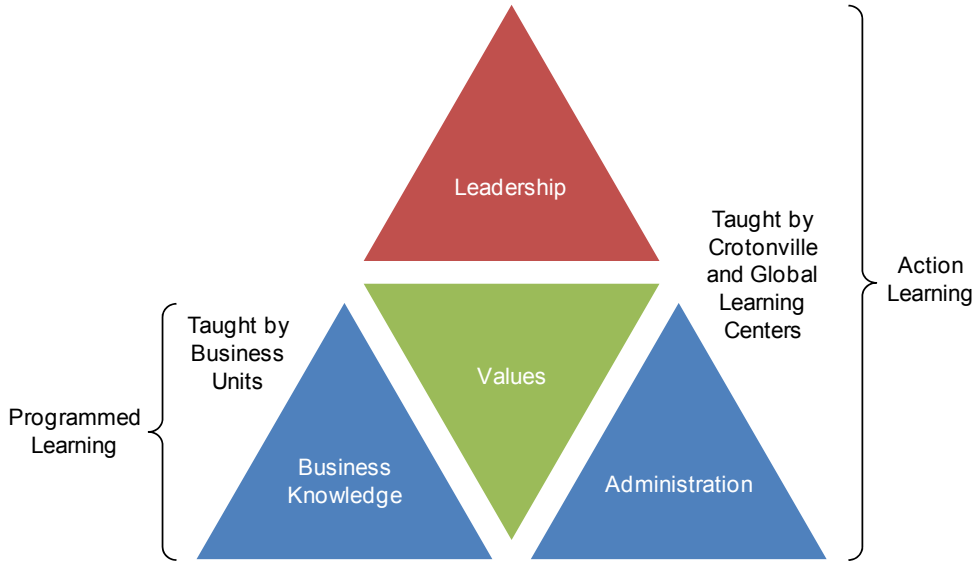


Figure C-1. The Values-centered Training Competency Model at General Electric.

Note. Action-learning based training in corporate values (at the center), leadership, and administration skills are the domain of Crotonville and the GE Global Learning centers, with programmed learning in technology-specific business knowledge taught by the business units. Adapted from interview notes.

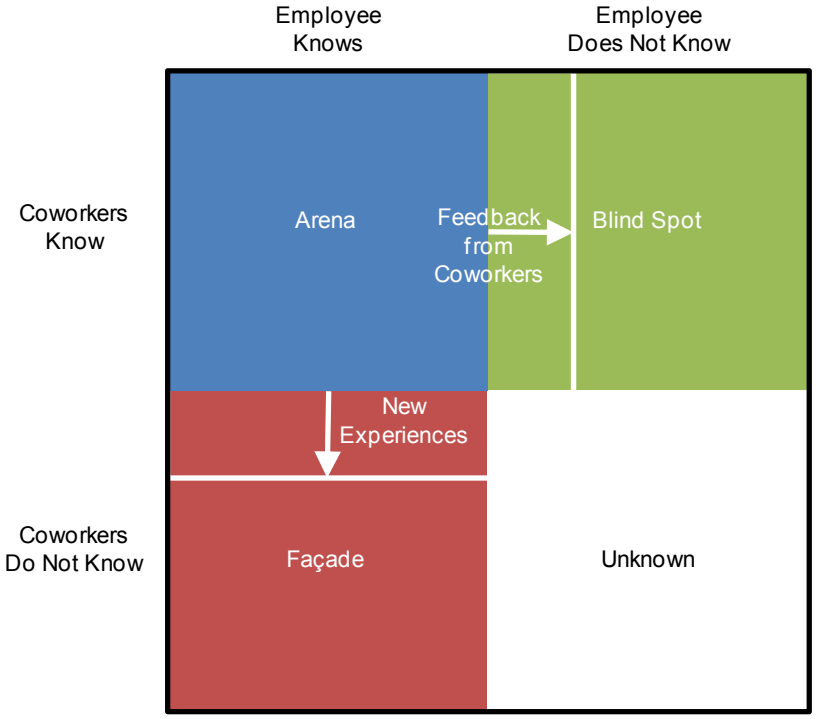


Figure C-2. The Johari Window at General Electric.

Note. The constant flow of feedback from supervisors, peers, and direct reports helps employees understand what they mutually know about themselves (Arena), what they are unaware of (Blind spot), the unobserved un/subconscious (Unknown), and what is hidden from others (Façade). Coworker feedback expands the region of understanding arena by diminishing blind spots, while new experiences can unveil façades so coworkers can better understand their fellow employees. Adapted from interview notes.

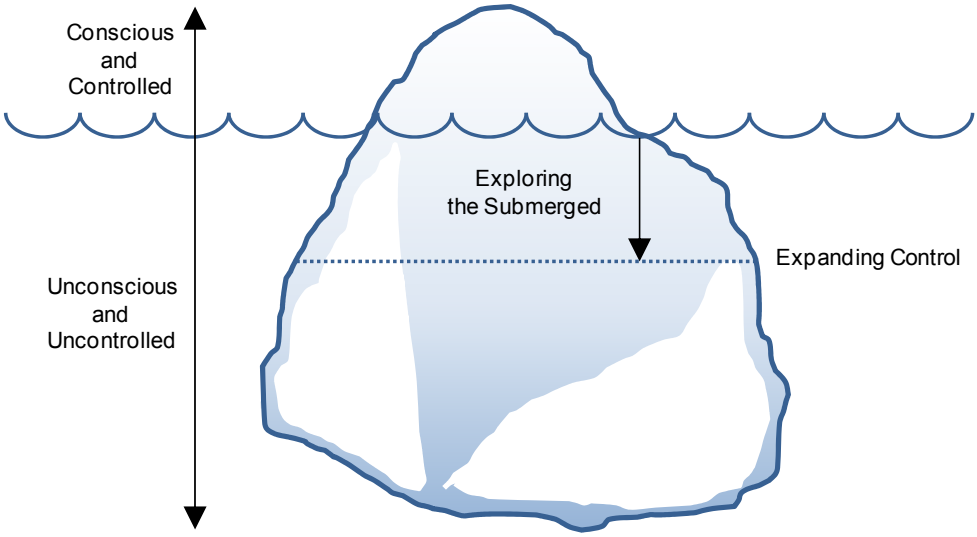


Figure C-3. The Iceberg Metaphor of Consciousness.

Note. Every individual can control their own conscious behavior, but not any unconscious behavior of which they are not aware. Only by exploring the depths of the unconscious can individuals exert increased control over their unconscious actions. Adapted from interview notes.

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