

Enterprise-Wide Process & Performance Excellence: Architecting Human Capital for Continuously Relevant Organizations

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Abstract : Program value proposition, content, organization, and strategy are elaborated herein. This elaboration is the result of careful study of business and social trends, along with careful listening to collaborating enterprises. It is in this latter sense that the *Enterprise-Wide Process & Performance Excellence* certificate program is a product of a co-creation process.

Key words and Phrases: Six Sigma, Lean Management, Design Innovation

1. Introduction

There is rapidly increasing global demand mandating that organizations must function in highly efficient and effective ways, be relevant to their stakeholders, and be simultaneously socially and environmentally responsible. Such demand is driven not only by long-existing competitive pressures that have been exacerbated by an expanding global marketplace, but also by accompanying needs for improved financial performance in light of ever-increasing resource constraints, and by demands for improved corporate governance of socially responsible organizations. As such, an important human capital need of many organizations is for individuals able to become enterprise-wide process & performance excellence catalysts today, lean enterprise leaders tomorrow, and innovators continuously.

In short, enterprises seek to be economically, socially, and environmentally sustainable. In more concise terms: they are on a quest to become continuously relevant. This does not manifest accidentally, but rather by design, so that the continuously relevant organization (CRO) must be architected. This is to an important extent accomplished by architecting the organization's human capital. CRO's are by nature dynamic, so that innovation as mindset, competence, and practice is critical, that is, CRO's are innovative to their core.

In response to the aforementioned human capital demand, and as driven by forward-thinking and forward-acting organizations, the Interdisciplinary Center for Organizational Architecture (ICOA)

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at Aarhus University (Denmark) established the *Enterprise-Wide Process & Performance Excellence* certificate program. The program is provided in a fully integrated and highly intense format that leverages strategic alliances among multi-national enterprises, collaboration with practicing business partners that include intra- and entrepreneurs, and significant internal expertise.

Primary program content is delivered at the graduate level in five intensive modules totaling twelve full days, with each module separating from the prior one by approximately one month in an effort to optimize learning and enable completion of a rigorous project driven by sponsoring organizations. At the project core the project resembles a Six Sigma black belt one that is of master's thesis level rigor with content that demands demonstration of significant financial, social, or environmental benefit. Beyond this core, projects are expected to integrate the whole of program content, which is more extensive than that associated with the Six Sigma and Lean Six Sigma Black Belt body of knowledge as, in fact organizational design, change management, sustainability, and corporate governance considerations must be addressed. In this sense, the expectation of a given project is that it is simultaneously focused and holistic, targeted and comprehensive.

Topical content of the program includes innovation and design of highly reliable products, services, and systems from a Six Sigma perspective; voice of the customer and customer needs elaboration and assessment; quality and productivity management & improvement theory, methods & strategies; project management; statistical theory & methods; lean enterprise theory, methods & strategies; change management; knowledge management; sustainability as broadly construed; organizational leadership; corporate governance; and performance management, measurement, and organizational architecture. In all, the *Enterprise - Wide Process & Performance Excellence* certificate program represents a blend of strategy and application that is both demanding and practical – that is to say – rigorous and relevant, with best practice implications that are both *now* and *next*.

Program value proposition, content, organization, and strategy are elaborated herein. This elaboration is the result of careful study of business and social trends, along with careful listening to collaborating enterprises. It is in this latter sense that the *Enterprise-Wide Process & Performance Excellence* certificate program is a product of a co-creation process.

2. Enterprise-wide Process and Performance Excellence

While not exclusively so, the need for efficient and effective governance of enterprises and their operations is in large driven by the four pillars of the BEST business excellence model of Edgeman and Hensler (2001, 2002, 2004, 2005) that reflect pressing social needs; increasing fragility of the natural environment; globally increasing governmental regulation as regards environmental impact and corporate transparency; and by the simultaneous needs of enterprises to remain or become

economically stable through continuous relevancy. The four pillars of the BEST model are:

- B: Business or economic performance and sustainability;
- E: Environmental or biophysical performance and sustainability;
- S: Societal performance and sustainability; and
- T: Technological innovation, performance and sustainability.

In a mathematical sense, the demand is for constrained optimization of enterprise performance where the constraints are predominantly capital, other resource, environmental, or other regulatory in nature. Optimization itself is generally of an economic nature and sustainable performance necessitates that such optimization must be both short- and long-term in nature with short-term performance addressing shareholder demands and long-term performance addressing the need for continued existence and future prosperity, as well as the demands of other stakeholders including, e.g. society and – through surrogate representation – the natural environment.

Any serious attempt at such optimization requires coordination through the depth of the organization and across the reach of its extended value chain, and hence integration of all elements of its strategy and tactics. Coordination and integration on such a scale is complex and requires application of knowledge across all the aforementioned domains, e.g., organizational design; Six Sigma innovation and design; quality & lean management; change management; project management; corporate governance; innovation; sustainability and so on.

More familiarly, such optimization is consistent with the goals of enterprise excellence, for which there are varied definitions. In the main, enterprise excellence is rooted in the history, development, and success of the quality movement, including the theories or methods of such luminaries as W. Edwards Deming, Joseph M. Juran, Armand V. Feigenbaum, Gopal Kanji, H. James Harrington, Yoshio Kondo, and Masaaki Imai. Enterprise excellence is known by alternative names, including performance excellence, business excellence, and organizational excellence, with models and criteria that have emerged through the rise over the past 25 years of international quality awards such as the European Quality Award and America's Baldrige National Quality Award and the positive impacts use of these models and criteria have had on organizations. The models behind these awards have been steadily converging. Leading models either explicitly or implicitly incorporate consideration of environmental responsibility, social responsibility, corporate governance, innovation and learning, financial performance, human capital development, marketplace performance, and customer and other stakeholder perspectives. In all cases evaluation of enterprise performance relative to a model and its criteria is based upon identification and assessment of enabling factors / processes and subsequent results.

Not in the least, impacts of effective enterprise excellence efforts are reflected in superior economic performance of enterprises winning such awards as relative to the economic performance of other

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organizations. The enterprise excellence definition provided here represents a refinement by Edgeman and Eskildsen, (2012a) of the one provided by Edgeman, *et. al.*, (1999):

Enterprise excellence is a consequence of balancing both the competing and complementary interests of key stakeholder segments to increase the likelihood of superior and sustainable competitive positioning and hence long-term enterprise success. This is accomplished through an integrated approach emphasizing innovation, operational, customer-related, financial, marketplace, societal, and environmental performance.

This definition acknowledges emerged emphases of the past decade including environmental concerns, and concerns growing out of the numerous failures of high-profile organizations that led to the *Sarbanes-Oxley Act* (Lander, 2004), passed by the U.S. federal government in 2002 in an effort to restore public confidence in and quality of corporate governance.

The essence of the aforementioned optimization is extension of performance excellence through possessing and effectively and efficiently deploying such knowledge and skill while simultaneously building corporate competence. Pervasively implemented, this may be referred to as *enterprise-wide process and performance excellence*.

If it is true that many organizations lack the collective knowledge and skill to accomplish such optimization, then the likelihood that any individual possesses such knowledge and skill is certainly less. Toward the goal of enhancing organizational capacity and capability in this arena, the Interdisciplinary Center for Organizational Architecture (ICOA) at Aarhus University (Denmark) formed a graduate level certificate program in *Enterprise-Wide Process & Performance Excellence* that can be fully absorbed as a module into its MBA or Executive MBA curricula.

3. A Business Model Canvas for Architecting Human Capital

Genesis of the *Enterprise-Wide Process & Performance Excellence* certificate program can be traced to late 2008, prior to the founding of ICOA. ICOA is a group of highly interdisciplinary individuals united around a few common themes and competences, including organizational design, quality management, innovation, sustainability, six sigma, human resource development, performance measurement and management, and perception and cognition.

When the discussion began in 2008, initial consideration was given to establishing a Six Sigma Black Belt certificate program to meet the needs of leading firms in the Northern European and Nordic regions. The concept at first was an entrepreneurial one aimed at capitalizing on strong demand for the sort of results that Six Sigma innovation and design approaches have been able to deliver for a large number of enterprises. The envisioned construct of Six Sigma, both in the program as originally conceived and now in the manifest program, is that Six Sigma is:

... a highly structured strategy for acquiring, assessing, and activating customer, competitor, and enterprise intelligence leading to superior product, system, or enterprise innovations and designs that provide a sustainable competitive advantage (Klefsjö, Bergquist, and Edgeman, 2006).

Subsequent to ICOA's 2010 founding, more careful scrutiny of program content and architecture began. In particular, the aforementioned study of business and social trends, careful review of literature, and the process of listening to and collaborating with major organizations led to the conclusion that limiting the program to Six Sigma Black Belt expertise as augmented by application experience would prove financially rewarding in the short run, and perhaps even in the longer run. That said, a decision was ultimately made to design a more adaptable and sustainable program that would yield greater opportunity for more profound, long-term impact if other, critical content could be integrated into the program in a coherent manner. This decision was influenced in almost equal measures by the responsibility associated with being part of a publicly funded institution, and by the motivation of assisting organizations in their quest toward what it truly an asymptotic aspiration of being continuously relevant.

During the program process it became clear that while Six Sigma innovation and design should be central to the program, it should be embedded in a broader construct such as organizational design (Burton, Obel, and DeSactis, 2011), or profound consciousness (Edgeman and Fraley, 2008). The system of profound consciousness (SYPROCON) is complementary to Deming's system of profound knowledge (Deming 1982, 1986), but more deeply integrates important themes that have emerged since Dr. Deming's 1993 death and that consistently arose in our discovery process. Among those themes are learning and creating (innovation); change management; resource efficiency, conservation (e.g. lean), and sustainability; cooperation and collaboration; and connect- edness and communication. While stated in somewhat different terms, these elements are consistent with several demands that are increasingly made of organizations:

- Corporate governance and transparency;
- Social, environmental, and economic sustainability;
- Effective organizational Design
- Lean consumption; and
- Innovation.

In all, the combination of study and co-creation, filtered through SYPROCON is consistent with the people-centered innovation process discussed by Edgeman and Eskildsen, (2012b) that, while informally applied, essentially led to the content, design and organization of the *Enterprise-Wide Process & Performance Excellence* program. Prior to more carefully elaborating program content and more deeply investing in its development and program marketing, it was of value to complete a basic business model canvas (Ostervalder and Pigneur, 2010) for the program. A simplified version of the canvas appears in Figure 1.

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KEY PARTNERS CONTENT, DELIVERY & APPLICATION: Organizational Architecture, Sustainability, Strategy, Quality, Six Sigma, Lean, Statistical, and Innovation. Experts from AU, ICOA & Business Collaborators. SPONSORING ENTERPRISES	KEY ACTIVITIES Content development; enterprise and participant recruitment; marketing.	VALUE PROPOSITIONS The program provides leading edge content applied directly to both existing and future needs of enterprises sponsoring program participants. Past experience predicts 25:1 short-term ROI. Post-certification program access to both experts and program alumni.	CUSTOMER RELATIONSHIPS Frequent interaction with key organizations. Establishment of formal program alumni knowledge exchange.	CUSTOMER SEGMENTS Enterprises intent on being continuously relevant through their human capital. Mid-to-upper level managers in such enterprises. Executive MBA & Professional Science Masters Program Participants.
	KEY RESOURCES Access to expertise; program delivery site; marketing materials and channels.		CHANNELS Face-to-face interaction, AU & ICOA internet and print media marketing.	
COST STRUCTURE Content development & delivery are the most dominant elements of the cost structure with development representing a mostly sunk investment. Delivery, delivery site, and marketing represent periodic costs.			REVENUE STREAMS Direct payment by organizations sponsoring program participants represents the primary revenue stream. This is a premium program delivered at premium pricing.	

Fig. 1: Enterprise-Wide Process & Performance Excellence Business Model Canvas

4. Enterprise-wide Process & Performance Excellence Content

The *Enterprise-Wide Process & Performance Excellence* program deals with the theoretical foundations of stakeholder relationship management and how the measurement of stakeholder satisfaction can be used to determine the architecture of stakeholder-relationship management systems. Further, participants will understand *Six Sigma Innovation & Design Principles* along with *Lean Enterprise* methods. When strategically linked and applied, these complementary approaches yield customer-and-other-stakeholder driven, highly resource efficient processes, products, and systems with near perfect performance. Assumed prior knowledge for program participants includes exposure to introductory statistical methods and quality management principles.

Six Sigma is featured in the program for numerous reasons, including its proven track-record of producing significant performance improvement that links to monetary results, but often transcends the financial domain. Additionally, Six Sigma integrates strategies and tools from Statistics, Quality, Business, and Engineering and has added billions of Euros to the bottom line of organizations across the financial, healthcare, military, manufacturing, and other economic sectors so that its widespread applicability supported its focal status in the program. Six Sigma divides into two significant branches that share a number of tools, techniques and objectives, but

often apply the tools and techniques differently. One branch focuses on significant innovation / redesign in or of existing products, processes, and systems. The second branch, referred to as *Design for Six Sigma*, is directed at design of new products, processes or systems. This program emphasizes both the innovation and design aspects of Six Sigma.

Lean Management and Manufacturing Theory and Methods have been developing largely in parallel with and complementary to Six Sigma with a result generally referred to as “*Lean Six Sigma*” wherein radical innovation in and / or design of products, processes and systems is approached through a “lean lens” that is intended to be highly resource sensitive. Given the program emphasis on innovation, design, and lean consumption as mapping to the economic, environmental, and societal dimensions of sustainability, the decision was made to integrate *DFSS*, *Six Sigma Innovation*, and *Lean Enterprise* theory and methods through team-based projects. Six Sigma, quality, productivity, and reliability professionals will recognize various of the following non-exhaustive, and unordered list of program elements:

- Enterprise Excellence Models and Organizational Assessment
- Importance of Sustainability to Enterprise Excellence
- Innovation, Design and Lean Practices
- Facilitation, Teams, and Team Charters
- Tollgate Reviews
- Six Sigma for Innovation & Design: Introduction to DMAIC & DMADV Approaches
- Lean Enterprise Methods
- SMART Goals & Objectives
- Elements of Project Scoping, Boundaries, and Management
- Change Management & Readiness: Motivations, Methods and Assessment
- Customer Needs and Needs Assessment: Sampling, Kano Analysis, and Other Methods
- Creativity Tools for Innovation & Design
- TRIZ: Theory of Inventive Problem Solving for Design Innovation
- Evaporating Cloud and Other Thinking Processes
- Organization & Prioritization of Ideas: Affinity Diagrams, Interrelationship Digraphs, Matrix Diagrams, and Nominal Group Technique
- Competitor Intelligence: Benchmarking
- Process & Value Chain Mapping
- Innovation & Design: Concept Generation, Evaluation & Selection
- QFD: Quality Function Deployment for Innovation & Design
- Statistical Design & Optimization Principles & Methods
- Principles & Methods of Design Verification
- Statistical Control Principles & Methods
- Failure Modes & Effects Analysis

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- Reliability & Safety Analysis
- Performance Architecture: Design and Assessment Issues
- Organizational Diagnosis and Design

Program content is mainly presented in an integrated lecture – case study – application format, with participants applying content both individually and in teams. Teams periodically present their ideas and work during sessions and are thus able to subject these to the scrutiny of other professionals who are all immersed in the subject matter, and thus already thinking about how ideas can be elaborated or re-directed, and how the associated work might be carried out.

Since process and performance excellence approaches are most typically applied in a team environment and integrate knowledge and strategies from quality management, engineering, business, and statistics, it is helpful but not entirely necessary to understand basic vocabulary from each of these areas and, also, to have some experience working in teams. Program participants are generally customer-focused, have a strong process-orientation, and have successfully completed an introductory statistics course. Direct professional experience can in some instances be substituted for elements such as completion of a prior statistics course.

Upon successful completion of the program, participants will understand and will have applied Six Sigma's Define-Measure-Analyze-Design-Verify or Define-Measure-Analyze-Improve-Control, or a hybridized approach to a meaningful project. Participant knowledge will strongly approximate that described in the Black Belt Body of Knowledge as provided by the American Society for Quality and participants will understand the synergy between Six Sigma and Lean Enterprise approaches, their relationship to performance measurement and management, and implications for organizational design. Additionally, participants successfully completing the program will have and understand of enterprise excellence and will be familiar with at least one prevalent model, such as that of the European Quality Award and will be able to understand the role of sustainability, broadly construed, for organizations aspiring to such excellence. Among the skills and tools those successfully completing the course will become familiar with are TRIZ; idea generation, organization design, prioritization, and deployment; quality function deployment; creativity tools; lean enterprise methods; benchmarking; and failure modes and effects analysis.

While course instructors are the primary program resource, content from all fields cited, e.g. quality management, enterprise excellence, Six Sigma, innovation, etc. is provided in the form of articles, case studies, and text books. Additionally, the program makes use of supporting software.

The program targets the operations, tactical, and organization-wide levels while ensuring that upon completion participants are able to control, design, assess, and lead organizational efforts.

While the program value proposition may be found in the business model canvas previously provided, the program vision can be stated as:

...deliver a rich, practical, and academically rigorous program that provides the knowledge, vision, and network, and confidence necessary for participants to become process and performance excellence catalysts today, lean enterprise leaders tomorrow, and innovators continuously.

Within the context of assessment and control participants become highly familiar with selected ISO standards (e.g. 9001 and 14000), are able to perform detailed profitability analyses, and deftly use and analyze balanced scorecard principles. From a design perspective participants master the Design for Six Sigma approach and integrate this with lean enterprise theory and methods. Leadership emphasis in the program is at both the project and organizational levels and hence requires participants to become skilled project managers and to lead change, while also mastering the innovation branch of Six Sigma. From a corporate governance perspective, the program emphasizes the dedication to multiple (and balanced) bottom lines through the aforementioned sustainability pillars, transparent and effective change, emphasis on carefully selected and organizationally important projects, compliance with widely-accepted standards, and economic profitability.

5. Summary

Enterprise-wide process and performance excellence is rapidly advancing from being a desirable organizational approach with selected positive results to a necessity for the organization seeking long-term sustainability at high-performing levels. At present the collective skills necessary to accomplish such results – even on a limited basis – are found only rarely across an organization's human capital.

Rather than leave such results to chance or to relegate it to something passed on from master to apprentice, the intent of the *Enterprise-Wide Process & Performance Excellence Certificate Program* developed by ICOA at Aarhus University is to perpetuate such results at the organizational level. The strategy for accomplishing this is transference of requisite knowledge to a critical mass of participants from organizations engaged in the program and to support that knowledge by applications level experience that demands documented high-level performance in a transparent and compliant manner where that performance must be in one or more of three domains: financial, societal, or environmental.

It is certain that program content will be routinely and regularly innovated as the program iterates, as more organizations participate, and as the network of program alumni expands, thus facilitating increase knowledge and best-practice sharing, along with insight into development of *next*

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best practices. As a strategy to create a larger footprint for program value delivery, a primary program goal is to engage a sufficient number of excellent and geographically dispersed collaborating institutions, so that more organizations in this larger footprint can derive benefit.

Overall, the intent of ICOA in creating, delivering, and expanding the *Enterprise-Wide Process & Performance Excellence* program is to make a larger contribution to an overarching goal of aiding organizations in their quest for continuous relevancy.

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