

New frontiers for Performance Improvement's theory and practice

By
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Abstract

The purpose of this article is discussing the roots, models and future of the performance field -known as PI, HPT or HPI-. The article presents some of the most influential models and tries to identify new fields for theory and practice at the onset of the 21st century and the knowledge-based society.

Towards this effort, the author has considered not only the contributions of those self-referenced as "performance improvement" or "human performance" theoreticians and practitioners but a much larger framework that includes other contributions to the field.

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*"When facts change, I change my mind.
What do you do, Sir?"*

*John Maynard Keynes
(1926)*

In the last two decades, as trade and communication barriers fall unleashing new market forces and the world economy becomes thoroughly global, new and systemic events challenge established business doctrine and previous experience. Less than a decade after the global crises of the 1990s signaled the fall of Communism and planned economies, unregulated global capitalism seems headed to a deep revision in the middle of a string of cascading shocks¹ that expose underestimated systemic risks.

Globalization has released new forces that –at their best- with India and China decades-long double-digits growth, has created 3-billion people strong emerging markets and lifted 800 million out of extreme poverty into the ranks of middle class standards of living.

At their worst –currently unfolding to our eyes-, those same global forces have created a “perfect storm” for developed economies that challenges traditional performance and management systems. The “gales of creative destruction” blow with hurricane force showing no mercy for the titans of the past and their impressive records of past performance.

A new “Glacial Age” for “business as usual” seems to be on its course.

Under such conditions, “improving” conventional performance seems particularly unfit to serve new organizations and customers facing such huge social and economic challenges. “Perfect storms”, however, not only carry menace, but the power to make change inevitable and bring about major revisions of “conventional wisdom” business performance thought and practice.

The global business crises might be a unique opportunity for performance consultants, researchers and scholars to redefine and expand their paradigms and embrace new ideas and contributions from other disciplines as well as the lessons of those new, ground-breaking companies that seem able to thrive under such critical conditions.

¹ Since 1999, the burst of successive “bubbles” –technology, housing, credit- in the US has spread globally and cascaded on new, larger crises that challenge conventional economic and business models and theories, as well as the ability of governments to contain the crises. (Ferguson, *The ascent of money: A financial history of the world*, 2008)

The purpose of this article is to describe some of the new challenges and lines of work and thought in the field of performance improvement that emerge from the theory and practices of leading 21st century organizations and business models and propose their integration in an expanded framework that builds on more diverse foundations and disciplines.

In doing so, we will try to break away from the purely theoretical and academic discussion as well as from the unscientific fads that dumb down consulting practice and the copycatting benchmarking that keeps business behind to bring about –and bring together- different –and often dissident- sources of research and ground-breaking business models from new, standard-setting business leaders.

Preliminary definitions

We will start by differentiating the concept of **performance** from those of **behavior**, **results** and **competence**.

Behavior –defined as *observable conduct* (external or internal)- is a critical component of performance, but *it does not tell us what performance is about*. Tom Gilbert provided the example of the behaviors required to handle a rifle and noticed that “no matter how often or how exhaustively we measure this behavior, we cannot tell what kind of performance it is. Is it murder, food gathering, or target practice? Is it legal, ethical, effective, valuable?”. (Gilbert, 1978, p. 16). *Behavior is a means toward certain goals* that may –or may not- produce certain results. And –as any means-, behavior implies activity and thus, costs – an investment of time and resources-. Modifying human behavior does not necessarily improve results.

Results are the accomplishments produced by certain behaviors or activities. Results may add or subtract value to individuals, organizations or society. By increasing value- subtracting results we can decrease performance. An old oil joke may serve to exemplify this principle: an oil engineer tells his manager that he has “good and bad news” for him about results. The engineer starts by telling the “bad” news first, explaining that -“for each cubic meter we extract, we lose 10 dollars”-. When asked for the “good” news, he retorts: -“we increased production 30 percent this month!”-

We will use Tom Gilbert’s definition of **competence** and **performance**: “*human competence is a function of worthy performance (W) which is a function of the ratio of valuable accomplishments (A) to costly behavior (B) or $W = A \div B$* ” (Gilbert, 1978, p. 18). Dale Brethower’s corollary to Gilbert’s definition of performance adds that “*performance is improved if, and only if, the cost of activity is reduced, the value of performance increased, or both.*” (Brethower & Smalley, 1998, p. 156)

The field of **Human Performance, Performance Systems** or **Performance Improvement** has been defined as “*a field of endeavor that seeks to bring about changes to a system in such a way that the system is improved in terms of the achievements in values*” (Stolovitch, 1982, p. 16) , “*systems thinking applied to human resource activities.*” (Rothwell, 1996, p. 29) and more recently “*a focus on strategic and tactical planning as a way to systematically and systemically improve the*

contributions that people make to their organizations and to external clients.” (Kaufman, Thiagarajan, & MacGillis, 1997, p. 5)

Sources and methodology

This article draws its conclusions and observations from an extensive meta-analysis of classic literature and recent research on both the history of business and the history of business thinking and methods in United States, Europe, Asia and the Americas.

Our preliminary inquiry covered the history of organizational practice from 1890 to the present from the classic studies of Alfred D. Chandler (Chandler, 1962) (Chandler, 1990), as well as multiple surveys and studies about 2000-2008 economic social trends from sources such as The Economist (The Economist, 2005) (The Economist, 2006), Wall Street Journal / The Heritage Foundation (Heritage Foundation), IBRD/World Bank (International Bank for Reconstruction and Development / The World Bank, 1998) (International Bank for Reconstruction and Development / The World Bank, 2006), the United Nations Development Program –UNDP-, the Organization for Economic Development –OECD- and the statistics of world economic growth 1-2030 AD produced by OECD’s economic historian Angus Maddison (Maddison, 2000) (Maddison, 2001) (Maddison, 2003) (Maddison, 2006) as well as our own (Bernardez, 2006) (Bernardez, 2007) (Bernardez, 2008)

We sourced our analysis of 21st century trends in the work of Thomas Friedman on globalization (Friedman T. , 2005) (Friedman T. , 2008), C.K. Prahalad on Bottom-Of-Pyramid –BOP- markets and emerging economies (Prahalad & Hammond, 2002) (Prahalad C. K., 2005), Chris Anderson (Anderson C. , 2006), Geoffrey Moore.

Mariano Bernardez (Bernardez, 2003) (Bernardez, 2008) work on the impact of technology in organizational and social performance, and Mark Penn et al in niches and micro-trends (Penn & Zalesne, 2007) and Richard Florida’s work on the emerging 21st century client as a creative class (Florida, 2002) provided additional perspectives on the new social and technological realities.

Alvin and Heidi Toffler (Toffler, The Third Wave, 1984) (Toffler, 1984) (Toffler, 1991) (Toffler & Toffler, 2006) and John Naisbitt (Naisbitt, 1982) studies on the advent of the knowledge society and wealth creation larger social mega trends, respectively were also of great help in defining key change factors.

Our references about the history of Performance Improvement and Human Performance Technology fields come from the studies of Peter J. Dean and David Ripley about the pioneers (Dean & Ripley, 1997), the 1992 and 2006 *Handbooks of Human Performance Technology* published by the International Society for Performance Improvement edited by Harold Stolovitch and Erika Keeps (ISPI, 1992) and more recently by James Pershing (ISPI, 2006) , Kaufman and Thiagarajan’s 1997 compilation (Kaufman, Thiagarajan, & MacGillis, 1997) and our own work (Bernardez, 2006) (Bernardez, 2007).

The work of Fareed Zakharia (Zakharia, 2008), historians Niall Ferguson (Ferguson, 2004), Jeffrey A. Frieden (Frieden, 2006) and the keen –and adversarial- economic observations of economist Alan Greenspan (Greenspan, 2007) and Nobel Prize Joseph E. Stiglitz about the nineties and globalization (Stiglitz, 2002) (Stiglitz, 2003) provided an historical and economic framework and background. David Halberstam's chronicles of the social changes in the decades 1950-1970 was a valuable source for understanding consumers' culture change (Halberstam, 1993).

On the practical field, the 23 business projects and business leaders incubated at the PhD program in Social and Organizational Performance at the Sonora Institute of Technology in Mexico where I teach and coach were invaluable sources of evidence and data with regard to the travails and challenges of new ventures in the 21st century. (ITSON - Sonora Institute of Technology, 2007) (Rodriguez Villanueva & Guerra-Lopez, 2005)

Last but not least, my Faculty colleagues and performance improvement gurus and pioneers Roger Kaufman (Kaufman, Corrigan, & Johnson, 1969) (Kaufman, 1972) (Kaufman, 2006), Dale Brethower (Brethower, 1972) (Brethower, 2007), Geary Rummler (Rummler & Brache, 1995) (Rummler, 2004) , Ingrid Guerra (Guerra-Lopez, 2007) and Bob Carleton (Carleton & Lineberry, 2004) provided their insights, criticism and personal testimonies about the evolution of the Performance Improvement and Human Performance Technology fields in which they are still breaking new ground.

Why moving beyond conventional “performance improvement” matters

The world is not “improving” in small steps by “tuning up” existing organizational and business models.

It is changing by “quantum leaps”, forced to sail into uncharted waters through storms of “*creative destruction*”², continuously redrawing its own boundaries and reinventing organizations, countries and cultures.

The challenge of 21st century organizational theory and practice is not about “improving” performance but to create and expand sustainable wealth³.

Four critical forces have been driving researchers, managers and business leaders beyond the traditional, internal focus in “process improvement” started by Taylor and Gilbreth at the end of the 19th century (Wren, 2005) towards new realities and frontiers.

² Term coined by economist Joseph Schumpeter, who in his study of capitalism business cycles, introduced the idea that boom and bust cycles are intrinsic to innovation, acting as the “gales of creative destruction” by destroying obsolete organizations and replacing them with new, innovative ones. “Creative destruction” not only renews organizations, but creates new needs, goods and markets. (McCraw, 2007), Page.68

³ The global recession started at the time we write this article shows the urgency of adopting new performance models that not only measure and plan short-term, “on the paper” profit –such as financial derivatives on mortgage debt that created unrealistic, unsustainable house prices- but actual value added to the real economy and the consumer. Double-bottom line business cases are examples of the new trends in the field. (Bernardez, Minding the business of business: tools and models to design and measure wealth creation, 2008)

Factor # 1: Globalization

The first factor is the *globalization* process, which has dramatically expanded the scope of conventional business across geographic and cultural boundaries. Thanks to globalization's "flatteners" such as technology, outsourcing and global, virtual value chains (Friedman T. , 2005), smaller, nimbler, knowledge-intensive companies such as Dell, Amazon or Google to compete and even prevail against traditional multinational corporations such as IBM, Sears or AOL/Warner.

The large American- or Western Europe-based manufacturing company that served as model for business leaders and thinkers from Henri Fayol, F.W. Taylor, Henry Ford and Alfred P. Sloan to Jack Welch has been replaced by nimbler, knowledge-intensive, virtual organizations that serve multiple markets through an international, decentralized, multi-cultural workforce.

Globalization is also turning into "globality": a two-way multipolar economy where emerging market firms reach global relevance and compete for leadership in developed markets.

In this new world *"companies have no centers. The idea of foreignness is foreign. Commerce swirls and market dominance shifts. Western business orthodoxy entwines with Eastern business philosophy and creates a new mindset that embraces profit and competition as well as sustainability and collaboration. Hundreds, even thousands of companies that have their origins outside the established world of Western commerce –Argentina, Brazil, Chile, China, the Czech Republic, Egypt, Hungary, India , Indonesia, Malaysia, Mexico, Poland, Russia, Thailand and Turkey- are burning onto the big stage."* (Sirkin, Hemerling, & Bhattacharya, 2008, p. 2)

In a multi-polar world where emerging economies and markets have been doubling the economic growth rate of developed countries for the last 20 years (Prahalad C. K., 2005) (Zakharia, 2008) and growing their own local companies, the old "multinational" business models based on mass-marketing products and services designed for American consumers to the "rest of the world" through more or less controlled subsidiaries modeled in their central headquarters' organization are no longer competitive.

Coca-Cola and Disney⁴ are meeting Huiyuan⁵ and Bollywood.

Because globalization has increased dramatically the interdependence and complexity of business transactions and its consequences, incremental attempts to "improve" individual or organizational performance are likely to backfire by optimizing operational "subsystems" at the expense of strategic business and societal results.

Traditional "performance improvement" practices focused on "optimizing" individual companies results by "farming out" obsolete business models to emerging countries to

⁴ The initial failure of Euro Disney in catching up with the European market is another example of the obsolescence of the old "multinational" approach. Michael Eisner visited Euro Disney and chastised his managers for the low occupancy rate of the Disney hotel. When Chinese managers explained to him that the Coca-Cola bottling plant from Euro Disney did not sell as fast as expected, he said: "It's Sorkin, 2008)

minimize costs usually end creating backlashes in the form of worldwide environmental crises, labor unrest and social conflicts that create a hostile environment for business and menace the viability of the entire project⁶.

Moving beyond such conventional “cost optimization” models –and the hubris of using emerging markets to “mothball” obsolete practices– , pioneers in addressing social performance issues and promoting responsible business practices such as *Whole Foods* and *Starbucks* command premium prices and beat the return rates of their industry by offering organic food and coffee produced by small farmers with fair labor practices to their socially conscious consumers⁷.

Factor # 2: Knowledge-based economy

In the current *knowledge-based economy* announced by pioneers Drucker (Drucker, 1985), Naisbitt (Naisbitt, 1982) and Toffler (Toffler, 1984) (Toffler, 1991), *intangible assets* such as *intellectual* and *human capital* (Bernardez, 2008) amount to almost 80% of modern companies’ market valuation⁸ (International Bank for Reconstruction and Development / The World Bank, 2006) .

As organizations and workforce replace the old 20th century assembly-line, mass production paradigms based on standardized labor with new technology-intensive, flexible, virtual and globalized processes (Dell, 1999), *knowledge workers* participation rise to 45% of the US workforce (Drucker, 1988) (Florida, 2002).

In the most developed economies, business models focused on developing and franchising ideas through innovative performance systems are steadily replacing traditional corporations with business models focused on managing physical assets, manufacturing or extracting natural capital.

In the 21st century, as knowledge production and application becomes the central source of economic value, manufacturing is being farmed out to the second-tier, emerging economies in the same manner that agriculture and mining were outsourced to Third World countries during the 19th and 20th century.

Most OECD economies have entered the knowledge economy era, specializing in producing and commercializing intangible assets such as intellectual capital –scientific and technological discoveries, design and branding, business models- and CI-intensive activities such as global finance and communications.

⁶ During the first wave of globalization (1945-1970) American companies invested heavily in extracting minerals and fossil fuels from Middle East and Africa, repeating the “drill, dry and leave” approach of the first gold and oil rush in the US (1845-1920) . That “Aramco” business model not only subtracted natural capital in the region, installing repressive regimes and creating dysfunctional societies that nurtured oil crises (1979, 1991, 2006) and global terrorism. (Oren, 2007)

⁷ As a testimony to the success of such new models, Wal-Mart has recently started to modify its own, including organic products and requiring socially responsible practices among its suppliers.

⁸ According to Mandel and Hamm (Mandel & Hamm, 2006) and Bernardez (Bernardez, Capital Intelectual: creacion de valor en la sociedad del conocimiento, 2008) page 233 , intangible assets amount to almost 80 percent of the market value of the top business leaders in the Fortune 500 index between 2000-2006

Once the symbol of 20th century economic development, manufacturing is no longer the backbone of economic might as its declining margins –still attractive to promote farmers to middle class ranks- cannot sustain the new living standards and aspirations of the highly educated “creative class” of OECD countries.

Scientific, technological *and artistic* creations are the new core competencies of 21st century economic leadership.

Arts, Humanities and “social sciences” are no longer considered as low income career choices confined to bohemians or scholars but as increasingly profitable competencies essential to develop highly-valued intellectual capital assets such as design⁹, franchising and branding.

Entering –and keeping up with competition- in the knowledge economy level requires individuals, organizations and communities to raise their investment in human capital.

The “creative class” workforce that operates our 21st century’s “knowledge factories” cannot be managed with the industrial engineering methods of Henry Ford. Furthermore, 20th century performance methods focus on standardization and variance elimination can slow down the pace of innovation required to keep up with competition in a knowledge-based economy¹⁰.

Factor # 3: Rise of the emerging, BOP markets

The global economy has expanded the focus of business from catering to the 150 million well-off consumers at the “top of the pyramid” in OECD markets towards serving 4 billion people living on 4 dollars a day in the emerging markets at the “*Bottom of the Pyramid*”¹¹(BOP).

BOP markets are becoming the breeding ground for a new class of emerging global organizations –such as China’s *Lenovo*, India’s *Tata* and *Infosys*, Brazil’s *Embraer*, or Mexico’s *Cemex*- with innovative and highly competitive business models¹², products and services.

⁹ Design constitutes more than 70% of the actual value of most products. The cost of materials or manufacturing of an iPhone or a Phillip Stark-designed juicer are constantly declining while their market price rises. A Calatrava building or a Frank Gehry Museum command price tags because of their design value. According to Daniel Pink, “the wealth of nations now depends on having artists on the room. In a world enriched by abundance but disrupted by the automation and outsourcing of white-collar work, everyone, regardless of profession, must cultivate an artistic sensibility”. (Pink, 2005) page 69

¹⁰ The disappointing results reported by companies such as *3M* and *Motorola* after applying *Six Sigma* methods to accelerate technological products development provide abundant evidence for the case. 3M CEO George Buckle explained his decision to abandon Six Sigma on these terms: “Invention is by its very nature a disorderly process” You can’t put a Six Sigma process into that area and say, well, I’m getting behind on invention, so I’m going to schedule myself for three good ideas on Wednesday and two on Friday. That’s not how creativity works.” (Hindo, 2007)

¹¹ In his ground-breaking “The fortune at the bottom of the pyramid”, C.K. Prahalad showed how large multinational companies as well as local, small entrepreneurs have untapped BOP markets with record growth in both revenue and profitability. (Prahalad C. K., 2005)

¹² A more detailed analysis of these emerging business model can be found in Bernardez’s Capital Intellectual (Bernardez, Capital Intellectual: creacion de valor en la sociedad del conocimiento, 2008) and Prahalad’s The fortune at the bottom of the pyramid (Prahalad C. K., 2005)

New frontiers for the theory and practice of performance improvement

According to Goldman Sachs, China, India, Brazil and Russia –the so-called BRIC group currently attracts 35% of foreign direct investment –FDIs-, in a trend that is expected to rise to 50% of global investment by 2020. (Goldman Sachs Inc., 2004) (Prahalad & Hammond, 2002) (Zakharia, 2008)

The migratory tide of highly educated human capital is turning around as more OECD-trained managers and professionals return to their homeland in China, India, Brazil or Eastern Europe to join new local ventures and engage in the development of their native communities and local markets through competition in global, open trade. (Boucher, Stark, & Taylor, 2006)

Those repatriated professionals who left for educational and economic opportunities, return to their countries sacrificing pay and lifestyle standards for the unique opportunities for innovation, entrepreneurship and social impact offered by the organizations in emerging countries.

Chinese engineers trained in the top US automakers return to join the small and rising local automaker *Changfeng* in spite of lower salaries because –as Li Jianxing, company’s CEO explains-: “*in Detroit, the working conditions and pay are much better. But the city lacks energy and passion. We have plenty of that in China*”. (Sirkin, Hemerling, & Bhattacharya, 2008, p. 4)

Serving the poor, profitably –as C.K. Prahalad proposes (Prahalad & Hammond, 2002)- requires to radically rethink business, management and organization models for a multi-polar economy where emerging countries not only increase the *global demand* for products and services –doubling the growth rates of OECD countries- but also dramatically expand the *global supply capacity*, raising living standards globally by lowering costs, expanding and diversifying the global workforce.

New business models and organizations born in emerging and developing markets–such as India’s *Arcelor-Mittal* and *Infosys* or China’s *Lenovo*- are taking over old multinational business and brands and demanding new management and performance standards. Such standards require to go beyond conventional, “single bottom-line” short-term profit goals and metrics to develop new societies, markets and consumers in order to sustain growth.

The challenge is to invent new performance and wealth creation systems apt to develop BOP markets and business infrastructure and supporting and testing innovative business models that can later be replicated in developed markets.

Developing BOP markets is not just a philanthropic endeavor, but a survival requirement for global companies and developed economies. Strong emerging markets are essential for a safer, more stable global economy that not only expands demand and raises living standards, but diversifies risks by balancing local and regional business cycles.

Factor # 4: e-Performance

The generalization of online, virtual communications, collaboration and commerce during the 1990s ignited a social and technological revolution comparable to the introduction of the steam engine and the mechanized textiles in the 18th century *Industrial Revolution* or the electric motors, internal combustion engine and the assembly line during the early 1920s. (Basalla, 1988) (McClellan & Dorn, 1999) (Bernardez, 2007)

The most important consequence of the use and increasing availability of online technology was a dramatic increase in productivity by transforming on-site performance into online, collaborative, 24/7 e-performance systems (Bernardez, 2003) that raised economic output per capita while simultaneously keeping costs, prices and inflation low.

In 1992, chief *Fed*¹³ economist Alan Greenspan, perplexed by the apparent paradox of rising operating margins and compensations that didn't translate –according to the *Fed's* economic performance models- into higher costs or prices started to think of a hidden, technological factor:

“Most companies were reporting rising operating profit margins. Yet, few have raised prices. Most consolidated costs (that is, for a business considered as a whole) are labor costs. So if labor costs per unit were flat or declining, and the rate of growth of average hourly labor compensation was rising, the growth of output per hour must be on the rise; productivity was truly accelerating. And if so, then rising inflation would be unlikely” (Greenspan, 2007, p. 172)

Greenspan concluded that what doubled US economy's productivity rate during the period 1994-1999 was the progressive –yet underreported- impact of computerization and the generalization of online technology.

Alerted by the 1992 experience, Greenspan advocated for the introduction of new performance indicators to capture “intangibles” in Fed's metrics and prevent economic mistakes such as raising interest rates that might choke the new but still “invisible” economy. This “invisibility” of the technological factor in performance metrics was due to the fact that *“in the famous words of Nobel Laureate Economist and then MIT professor Robert Solow, computers were “everywhere but in the productivity statistics”*” (Greenspan, 2007, p. 474)

Greenspan's telling anecdote illustrates our point about the urgency of adopting new performance models and paradigms –in this case, e-performance- not just to improve performance and realize technology's potential, but also to update obsolete business metrics and accounting systems that fail to measure “intangible” assets. (International Bank for Reconstruction and Development / The World Bank, 2006)

In the same manner than Taylor, Gilbreth, Fayol and Sloan provided efficient performance and management systems to the Fords and General Motors of 75 years ago

¹³ Federal Economic Reserve, created by Franklin Delano Roosevelt in 1913, is the US Central Bank

(Wren, 2005) (Sloan, 1963, 1999) (Pelfrey, 2006), 21st century researchers and thinkers must create new performance, management and business models to develop the full potential of emerging markets and knowledge-based organizations.

These new realities have outgrown the “process improvement”, industrial engineering methods that adopt a “manufacturing” paradigm in designing for mass-production and mass-marketing and the purely financial criteria for business design embraced by traditional MBA programs. Developing successful, sustainable performance require using –and developing- performance models to integrate and subordinate multiple functional views to a single business perspective focused on adding value to client and market.

The companies of the 21st century must be designed from the “outside-in”: starting from meeting the requirements of multiple, changing market niches and multi-geographic, multi-cultural clients to create multi-organizational clusters and business ecosystems rather than merely “flushing” global markets with “standard” business models and value propositions developed decades before for the markets of the 20th century .

Human Performance Technology (HPT)

From its early origins in the work of Kaufman (Kaufman, Corrigan, & Johnson, 1969) (Kaufman, 1972); Brethower and Rummler (Brethower, 1972) (Rummler & Brache, 1995) and Gilbert (Gilbert, 1978) , those in the *performance improvement* or *performance system* ¹⁴fields developed a unique focus on systemic analysis and solution that emphasized in

- a) Considering performance and behavior as *functions* of a larger context or performance system (Brethower, 1972)
- b) *Defining “need” as a gap between current and desired results*, not as a “lack of” resources or as a subjective “want” (Kaufman, 2006)
- c) *Analyzing how all different factors interacting in a performance system affect performance* and performer and affect each other instead of blaming the performer (Gilbert, 1978) (Rummler & Brache, 1995) and
- d) *Considering not just the individual, job-level factors* (Gilbert, 1978), but processes, organization (Rummler, 2004) and societal context (Kaufman, 2006).

The study of human performance as defined by these pioneers brought together three key original components: the use of *the scientific method* to analyze and explain performance and as the basis to design and implement performance solutions; the discoveries and methods of *experimental psychology* in the study of human behavior - and particularly human learning- and the concepts of *system theory*.

¹⁴ Also called more recently –and controversially- Human Performance Technology by the International Society for Performance Improvement (ISPI)

HPT Foundations

Scientific Method

*“As far as the laws of mathematics refer to reality, they are not certain;
and as far as they are certain, they do not refer to reality.”*

Albert Einstein

“Geometry and Experience”, January 27, 1921

Instead of relying improving performance “by the seat of the pants” like most business pioneers or following untested academic doctrines, performance engineers like Taylor and Gilbreth, followed the rigorous foundations of the scientific method.

The new school advocated studying human and organizational behavior and performance through the rigorous application of the scientific method as the only way to guarantee replicable results and accurate understanding of the causes of variation in both behavior and performance.

The principles of the modern scientific method originated in the 18th century in the natural sciences by Galileo Galilei, Isaac Newton, Francis Bacon, William Harvey and other science pioneers. (Gribbin, 2002) (Bunch & Hellemans, 2004)

The scientific method approach requires *objective measurement of observable facts, rigorous hypotheses formulation and testing* by mathematical and statistical methods, *validity* and *reliability* of data and *replicability* of the experience under similar conditions by strictly controlling the variables. (Angier, 2007)

Other significant influences in the field of human performance –such as industrial psychologists like Elton Mayo (Latham, 2007), Abraham H. Maslow (Maslow, 1998) and Frederick Herzberg (Herzberg, Mausner, & Bloch Snyderman, 1959,2004) and economists such as F.A. Hayek and Gary Becker- expanded the original approach by combining scientific-based research with other disciplines like mathematics, humanities and the so-called social sciences.

These departures from natural sciences methods were instrumental to analyze behavior and performance in less controllable social and macroeconomic settings *outside the workplace, the laboratory or the classroom* –such as consumers, investors, organizations and markets behavior and performance- that might not meet laboratory standards or allow full experimental testing.

In his book *The Counter-Revolution in science: Studies on the Abuse of Reason* (Hayek, 1979), Nobel Prize laureate Hayek asked for a wider concept of science for disciplines such as economics on the grounds that

“While for the natural scientist the contrast between objective facts and subjective opinions is simple, the distinction cannot as readily be applied to the object of the social sciences. The reason for this is that the object or “the facts” of the social science are also opinions –not opinions of the student of the social

phenomena, but opinions of those whose actions produce the object of the social scientist” (Hayek, 1979, p. 47)

Hayek’s exception matters particularly to the field of organizational performance because a large part of organizational behavior, design, planning and management has to do with precisely economic facts and phenomena.

On the methodological front, influential epistemologists like Karl Popper (Popper, 1935,1959,1992) and Mario Bunge (Bunge, 2006) recommend a wider approach to scientific research that is still resisted by those orthodox defenders of a narrower definition of acceptable scientific methods, who consider “social sciences” an “oxymoron”.

While recognizing this inner tension between different definitions –and stages of maturity- of scientific standards and methods, we included the contributions of disciplines such as *Economics*, *Epistemology* and other social sciences as well as technologies such as *Cybernetics*, *Engineering*, *Marketing* and *Management* as part of the legitimate foundations of the performance improvement field.

Psychology

Two main currents came together around the application of experimental and clinical psychology to the improvement of individual behavior and performance:

1. *Experimental psychology applied to **work** behavior*

The “scientific management” movement –led most prominently by F.W. Taylor (founder of the Harvard School of Business and the first MBA) (Taylor, 1999), Frank and Lillian Gilbreth (pioneers of time and motion, process improvement and quality schools) (Wren, 2005) and Frederick Herzberg’s studies on motivation to work (Herzberg, Mausner, & Bloch Snyderman, 1959,2004)- focused on studying and optimizing behavior at work in industrial mass-production environments. The scientific management movement had a twofold focus on improving work process and conditions at the individual job level and developing planning and management methods to optimize work supervision.

2. *Experimental psychology applied to **learning** behavior*

The experimental psychology school focused on studying human behavior in learning environments through experimental methods led by B.F. Skinner (Skinner, 1971) (Bjork, 1999) in the experimental field and Skinners’ disciples in the educational field such as Sidney Pressey, Norman Crowder and other pioneers of programmed instruction¹⁵-, (Dean & Ripley, 1997) (Bernardez, 2007) and the early work of Robert Mager (Mager R. F., 2003).

The experimental psychology school focused on understanding and improving learning accomplishment and efficiency by shifting the focus from instructors

¹⁵ The first name of current ISPI was National Society for Programmed Instruction, and B.F. Skinner and his disciples were among its founders.

and materials to learning processes and conditions. *Programmed instruction, teaching machines and instructional systems design* methods were some of their most important contributions.

Other extremely influential psychological contributions to learning performance were not limited to the experimental psychology movement. Among them, we include the *genetic psychology* of Jean Piaget (Piaget, 1950, 1999), the *learning theories* of Lev Vygotsky, Robert Gagne (Gagne & Medsker, 1996) and Albert Bandura (Bandura, 1997) as well as Kurt Lewin's *field theory* (Lewin, 1997), Erik Erikson's *cultural and developmental psychology* (Erikson, 1959), Malcom Knowles' *adult learning concepts* (Knowles, Holton, & Swanson, 1990, 2005) (Knowles M. S., 1972) and Carl Rogers' *dynamic psychology* (Rogers, On Becoming a Person: A Therapist's View of Psychotherapy, 1995) (Rogers, 1995).

System Theory

The view of performance as a function of a larger, self-regulated system that distinguishes the performance improvement and performance system approach stems from Ludwig Von Bertalanffy's General System's Theory about *open systems* (Von Bertalanffy, 1968) as well as from Wiener's cybernetics and Von Neumann's *games' theory* (Von Neumann & Morgenstern, 2007), Kurt Lewin's *field theory* (Lewin, 1997) and Claude Shannon's (Shannon & Weaver, 1948, 1998) and Gregory Bateson's *feedback and communications* theories. (Bateson, 2002)

Traced by most back to Alexander Bogdanov's three volumes Tectology (1922) and formulated as a General Systems Theory by Von Bertalanffy in 1948, the system or systemic approach was a radical departure from mechanistic models of behavior such as stimulus-response.

Von Bertalanffy defined **system** in its widest sense as "*sets of elements standing in interrelation*" (Von Bertalanffy, 1968, p. 38) and introduced the concept of open systems as those that exchange with their environment "*a continuous inflow and outflow*" (Von Bertalanffy, 1968, p. 39).

Roger Kaufman added that the system was "*the sum total of parts, working independently and together, to achieve common results*" (Kaufman, 1972) (Kaufman, Oakley-Browne, Watkins, & Leigh, 2003) adding that "*a system is composed of smaller subsystems that forms a larger subsystem*" (Kaufman, 2006).

Kaufman added a very important differentiation between **systematic thinking** – following a procedural order in organizing the parts-, **systemic thinking** –recognizing that the system is more than the addition of subsystems and that any change that occurs in the system affects the entire system- and **system thinking** –considering our shared society as a single, global system which includes and affects all other subsystems- (Kaufman, 2006)

Norbert Wiener pioneer work in the field of *cybernetics and control* (Wiener, 1948, 1961,1965) and Claude Shannon with his influential *mathematical theory of*

communication (Shannon & Weaver, 1948, 1998) provided new models to create *self-regulated performance systems*, such as Computer Based Training, Electronic Performance Support Systems and Artificial Intelligence applications to defense, banking and aerospace industries.

A performance system includes **dynamic elements** such as *inputs, processes (including feedback loops), outputs –such as individual, organizational and social results- , consequences of payoffs, customers/clients, stakeholders and value added or subtracted.* (Kaufman, Oakley-Browne, Watkins, & Leigh, 2003)

Other significant foundations for the systemic approach to performance were Kurt Lewin's *field theory* (Lewin, 1997) , Jose Bleger (Bleger, 1963) and Gregory Bateson's second-order cybernetics (Bateson, 2002)

Lewin considered behavior as emergent of three “nested” system levels: *mind, body and environment-* and introduced the concepts of individual and organizational behavior as the consequence of dynamic forces operating in nested *force-fields*.

Lewin viewed individual and organizational *conflict* as opposing forces either inside each subsystem –mind, for example- or between levels –conflicts between mind and body, or between mind and environment- and provided tools and models to operate with it that are regular part of performance interventions nowadays.

Bateson built on both natural sciences –biology was his original field-, psychology –such as Lewin's field theory- and cybernetics – such as *Wiener* and *Shannon's* communication and self-regulation models- but focused on the “soft”, *cultural dimension* of human behavior, performance and performance systems.

Learning and Technology Models

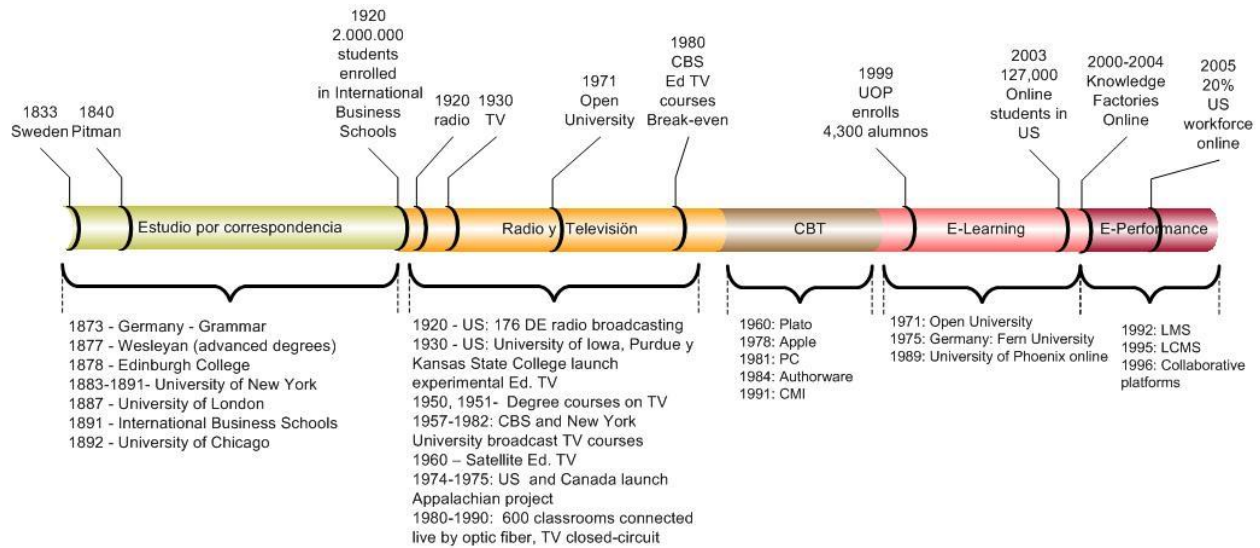
The early experimental psychology research of Thorndike's *connectionism*, Pavlov's *classical conditioning*, John B. Watson's radical *behaviorism* (Watson, 1924, 2007) (Buckley, 1989) and B.F. Skinner on *operant conditioning* served as the basis for new learning and teaching technology models, which would revolutionize the traditional educational field , such as Skinner's and Norman Crowder's *programmed instruction*¹⁶ methods and Sidney Pressey and B.F. Skinner's *teaching machines* –early ancestors of *Computer-Based Training* (CBT) *e-training* technology (Bernardez, 2007).

During the early 1930s, the extraordinary success of industry pioneers like Henry Ford in improving productivity and raising living standards through process standardization, assembly lines and mass production translated into “Fordist” approaches to education such as programmed instruction and distance education. (Doray, 1990)

Figure 1: Distance education milestones 1833-2005 (Bernardez, 2007)

¹⁶ The early name for B.F. Skinner and disciples' association was National Society for Programmed Instruction (1964) –NSPI-. In the early 1970's, The original meaning of NSPI's “PI” part was transformed into “Performance Improvement” by performance pioneers like Mager, Rummier, Kaufman, Harless and Gilbert. (Dean & Ripley, 1997) (Kaufman, Thiagarajan, & MacGillis, The Guidebook for Performance Improvement: Working with individuals and organizations, 1997)

New frontiers for the theory and practice of performance improvement



First through correspondence, later on through new media such as radio and TV broadcasting and mechanical teaching machines, *Fordist* approaches to education responded to the need of re-training large number of rural population to join the new industrial workforce. In 1920, the International Business School had enrolled 2 million students in correspondence programs. The same year, 178 radio stations started broadcasting distance education programs across the United States and in 1930, Iowa, Purdue and Kansas State College launched experimentally educational TV broadcasted to schools.

In addition to programmed instruction models and teaching machines, new models for learning and teaching processes such as the *Analysis-Design-Development-Implementation-Evaluation* –ADDIE– model and the *Instructional Systems Design* –ISD– models were developed by learning systems pioneers such as Dick & Carey (Dick & Carey, 1978,1998) and Jerrold Kemp (Kemp, 1985) to standardize learning and teaching methodology under a systems engineering paradigm such as those used in the industry (Bernardez, 2007) (Kearsley, 2008).

The enormous demand for workers able to under standardized, assembly-line, mass-production systems required to develop “on the job” training methods such as the *Training within Industry* –TWI– created during the Second World War war by the War Manpower Commission to provide fast and reliable technical training to recruits and specialists. Although the original TWI program was discontinued at the end of WWII, *Toyota Motors* incorporated TWI manuals as part of its *lean manufacturing*, *TQM practices*. Robert Mager developed the foundations of his methods to develop measurable educational objectives and systematized instruction working for this program to train radar operators. (Mager R. F., 2003)

Industrial and corporate training required new models to respond to the challenges posed by adult learners such as *being work-driven* (instead of grades-driven), *autonomous*, *self-directed*, *bringing valuable* –often unique and critical- *job experience*, *problem-centered* and *payoffs-focused*.. Malcom Knowles’ addressed the

adult learning challenge with his *Andragogic model* (Knowles, Holton, & Swanson, 1990, 2005) (Merriam, Caffarella, & Baumgartner, 2007)- .

Other *learning and performance models* addressed the challenge of developing *self-directed learning skills and systems* not only to engage adult as learners, but to tap their unique potential as experts and problem-solvers at on-the-job settings. Robert Bandura's *self-efficacy* theory (Bandura, 1997), Guglielmino's *Self-Directed-Learning* (Guglielmino & Murdick, 1997) (Guglielmino & Guglielmino, 2006) and Kolb's *Learning Styles*- (Kolb, 1983) provided new frameworks to support new training and performance improvement practices such as *CBT, CAI, e-learning, self-directed work teams, GE workouts and quality circles*.

Later developments of learning systems included *Computer Based Training* –in the early postwar using distributed, mainframe-based applications in schools such as the PLATO system, later using standalone, PC-based *Computer Aided Instruction* systems- (Kearsley, 1983) (Bernardez, 2007) , and author systems programs.

With the generalization of Internet computer-mediated communications and the *World Wide Web*, CBT methodologies evolved into *online learning* systems that expanded the scope and range of both formal education and corporate training. (Bernardez, 2007)

More recent models -such as Gloria Gery's *Electronic Performance Support Systems* (Gery, 1992), Etienne Wegner, Hubert Saint-Onge and Tom Stewart's *knowledge management systems* and Mariano Bernardez's *e-performance systems* (Bernardez, 2003) (Bernardez, 2007)- integrated learning and work processes in a continuum under the concept of performance system.

HPT Models

Individual Performance Models

Towards the late 1960s, the idea of developing a systemic approach to performance by integrating systems theory, the principles and findings of experimental psychology and the achievements of the new instructional systems brought together a group of pioneers around the National Society for Programmed Instruction and the Association for Behavior Analysis.

From its early origins in the work of Kaufman (Kaufman, Corrigan, & Johnson, 1969) (Kaufman, 1972); Brethower and Rummler (Brethower, 1972) (Rummler & Brache, 1995) and Gilbert (Gilbert, 1978) , those in the *performance improvement or performance system* ¹⁷fields developed a unique focus on systemic analysis and solution that emphasized in

- a) Considering performance and behavior as *functions* of a larger context or performance system (Brethower, 1972) , instead of an attribute of individual behavior or competence.

¹⁷ Also called more recently –and controversially- Human Performance Technology by the International Society for Performance Improvement (ISPI)

- b) *Analyzing how all different factors interacting in a performance system affect performance and performer and affect each other instead of blaming the performer (Gilbert, 1978) (Rummler & Brache, 1995)*
- c) *Defining “need” as a gap between current and desired results, not as a “lack of” resources or as a subjective “want” (Kaufman, 2006)*
- d) *Considering not just the individual, job-level factors (Gilbert, 1978), but processes, organization (Rummler, 2004) and societal context (Kaufman, 2006).*

Among the pioneers, Tom Gilbert –a disciple of B.F. Skinner and business partner in consulting with Geary Rummler- was arguably the first in introducing with great success a model to analyze and improve individual performance.

Table 1: The behavior engineering model (Gilbert, 1978)

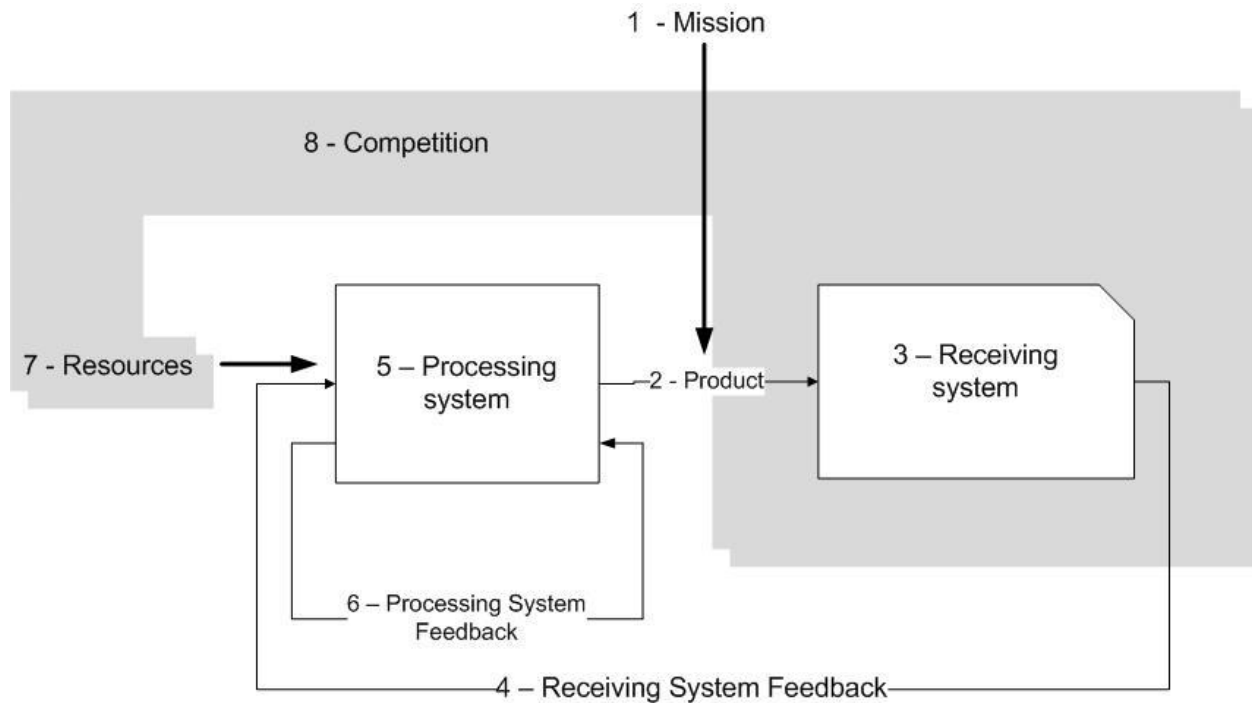
| | S_d Information | R Instrumentation | S_x Motivation |
|---|---|---|--|
| E – Environmental supports | Data <ol style="list-style-type: none"> 1. Relevant and frequent feedback about the adequacy of performance 2. Descriptions of what is expected of performance 3. Clear and relevant guides to adequate performance | Instruments <ol style="list-style-type: none"> 1. Tools and materials of work designed scientifically to match human factors | Incentives <ol style="list-style-type: none"> 1. Adequate financial incentives made contingent upon performance 2. Nonmonetary incentives made available 3. Career-development opportunities |
| P – Person’s repertory of behavior | Knowledge <ol style="list-style-type: none"> 1. Scientifically designed training that matches the requirements of exemplary performance 2. Placement | Capacity <ol style="list-style-type: none"> 1. Flexible scheduling of performance to match peak capacity 2. Prosthesis 3. Physical shaping 4. Adaptation 5. Selection | Motives <ol style="list-style-type: none"> 1. Assessment of people’s motives to work 2. Recruitment of people to match the realities of the situation |

Gilbert’s *Behavior Engineering Model (BEM)* identified six key variables determining performance –three on the performer’s environment (Data, Instruments, Incentives), three belonging to the individual (Knowledge, Capacity, Motives) and included consequences as a feedback loop that reinforced or reduced individual performance.

Instead of focusing on optimizing subsystems –as Taylor’s focus on individual’s time and motion, Mayo’s focus on extrinsic incentives or Gilbreth’s over-emphasis on individual process optimization-, Gilbert’s BEM “Six Boxes” –as it became nicknamed- offered a systemic view of individual performance that shed light on the interaction of multiple variables that influenced performance. By working on entire performance system instead of one of its subsystems, the BEM not only increased the chances of success of performance solutions, but also increased their durability.

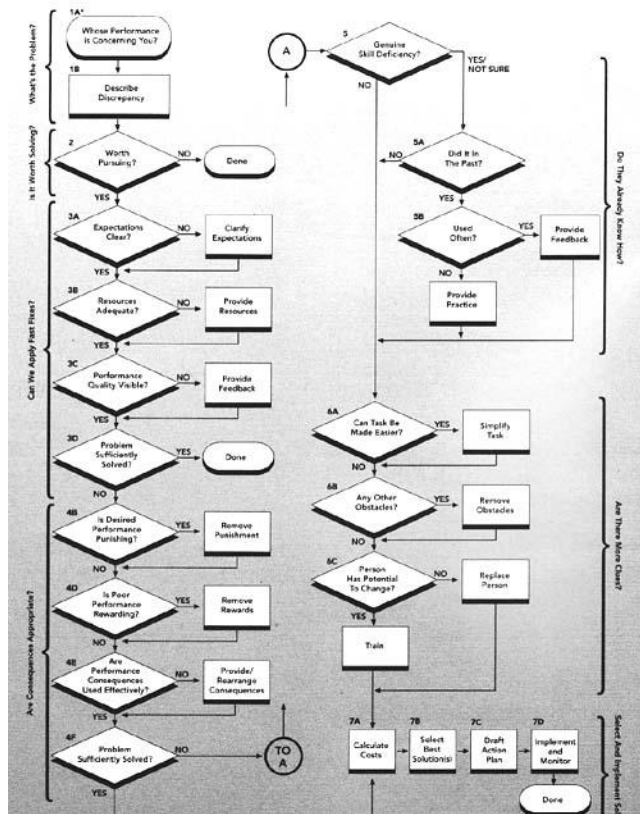
Dale Brethower's *Total Performance System* (TPS) (Brethower, 1972) provided another view of the performance system, with a stronger focus on its dynamics as a system. Brethower's TPS is organized following the actual process of engineering performance – from defining a Mission to Products, from Customers to Processing system- and established two feedback loops: a Receiving System feedback –from customers and market- and a Processing System feedback – from the process itself-, thus emphasizing the planning, management and control functions.

Figure 2: Total Performance System (Brethower, 1972) (Mallott, 2003)



Robert Mager and Peter Pipe (Mager & Pipe, 1970, 1983) created an algorithm-based model for analyzing individual performance, focused on providing a “trouble-shooting guide” to managers and supervisors involved in the actual process. Mager-Pipe’s algorithm helped also to prevent supervisors to jump to blaming individuals before analyzing all performance system factors and variables involved in poor performance.

Figure 3: Mager-Pipe’s performance analysis algorithm (Mager & Pipe, 1970, 1983)



Mager-Pipe's algorithm followed a "troubleshooting" flow with a sequence of questions for the observer.

The key issues to establish were:

1. Describe the problem, don't classify it –observable behavior and metrics-
2. Is the problem relevant? – Is worthy of solution for the organization?
3. Fast fixes:
 - a. Expectations clear?
 - b. Resources adequate?
 - c. Performance quality visible?
4. Consequences:
 - a. Is desired performance punishing?
 - b. Is poor performance rewarding?
5. Is a genuine skill deficiency?
6. Can task be made easier?
7. Other obstacles?
8. Person has potential to change?

Dean Spitzer's "context of work" model included at its center a new factor: the supervisor and its supervision.

Figure 4: Dean Spitzer's context of work (Spitzer, 1986) (Spitzer, 1995)

Supervisor's behavior and performance operates as a "filter" for all the other performance system factors, either in a negative way – by depriving performers of information about standards, misreading it or applying negative feedback to good performance- or a positive way –over-compensating performance system's deficiencies with his/her own effort or ingenuity-.



Although individual performance models represented a major improvement over scientific management and "subsystem-focused" methods -such as training, job processes organization or motivation- in the development of effective and sustainable performance systems at the job performance level, it was evident that they were not as

effective to address larger performance systems, such as organizational or business performance.

Process and Organization Performance

A few years after *Human Competence*'s publication, Gilbert's former business partners, Geary Rummler and Dale Brethower, took the entire approach to performance analysis and improvement several steps further in the systemic direction, noticing that using Gilbert's *BEM* model frequently led to optimize individual workers' performance at the expense of process and organizational performance.

Rummler noticed that poor performance was not just the consequence of a poorly designed performance system at the job level.

Being an experienced business consultant, Rummler quickly noticed that applying Gilbert's BME methodology seemed to generate new and more complex challenges.

If each worker were allowed to "improve" his/her own activities at the job level based on Gilbert "Six Boxes", regardless of other co-workers working ahead, before or while collaborating in a *shared work process*, their *collective* performance would experience a noticeable setback –as it would happen if each rower in a coxed four were to row at his/her own pace and rhythm-.

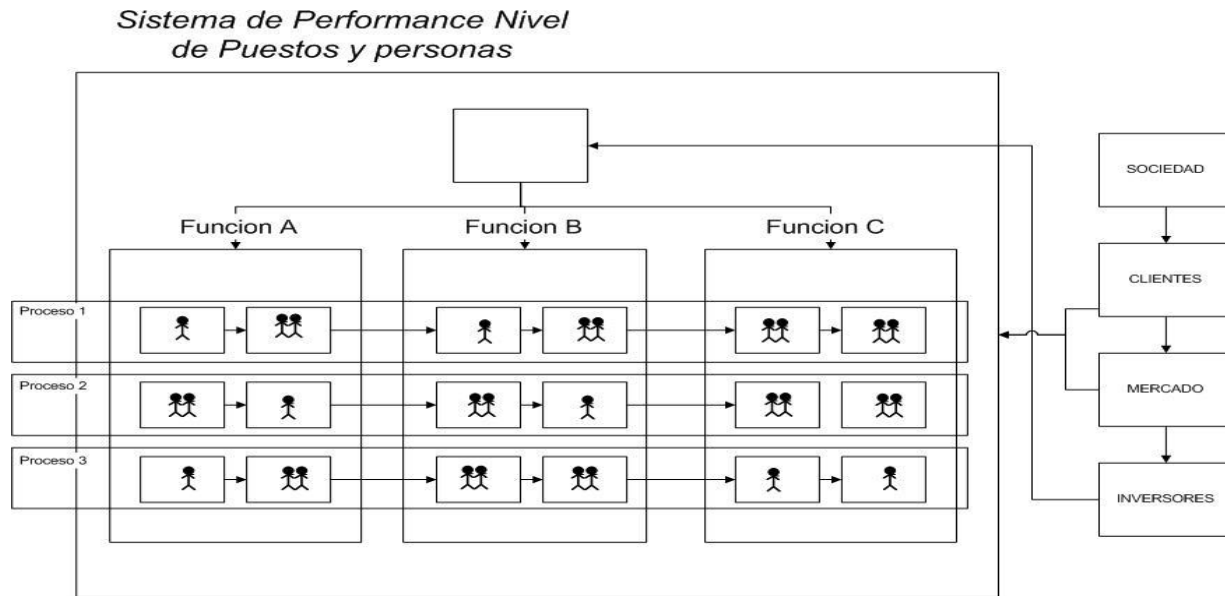
The job performance system depicted by the Six Boxes was, in fact, a subsystem of two larger performance levels: the process level –in which individual performers interact with each other and must align and coordinate their tasks to achieve a common goals- and the function level –in which workers are usually organized according to technical skills and specialized competencies.

Rummler noticed that organizational performance was indeed a process flow going across all areas and levels of the organization. Individual performance system's at the job level were organized in sequential processes where each job or department's output was another's input forming a value creation chain that ended in the external client.

Rummler's and Brethower's¹⁸ *Anatomy Of Performance –AOP-* model started by envisioning three levels of performance –nested one into each other-: *job level*, *process level* and *function level* –as shown in Figure 4-

Figure 5: Three levels of performance (Rummler & Brache, 1995)

¹⁸ According to their own report, Geary Rummler and Dale Brethower started expanding and questioning the primitive BEM model during their years of research together, and after parting for decades –Rummler to consulting, Brethower to academia- developed two models AOP and TPS that were in essence variations of a common one. They re-baptized it Anatomy of Performance –AOP- and have been working later years associated at ITSON with AOP.



From (Bernardez, Tecnologia del desempeño humano, 2006)

Rummler's AOP model analyzed performance at three levels –*job, process, organization*- and considered different “performance needs” at three stages of the *performance design and implementation* process: -*goals, design, and management*- considered from a performance management perspective.

The expanded model included now “nine boxes” that reflected not only the structure of the performance system, but the key steps in its design and implementation.

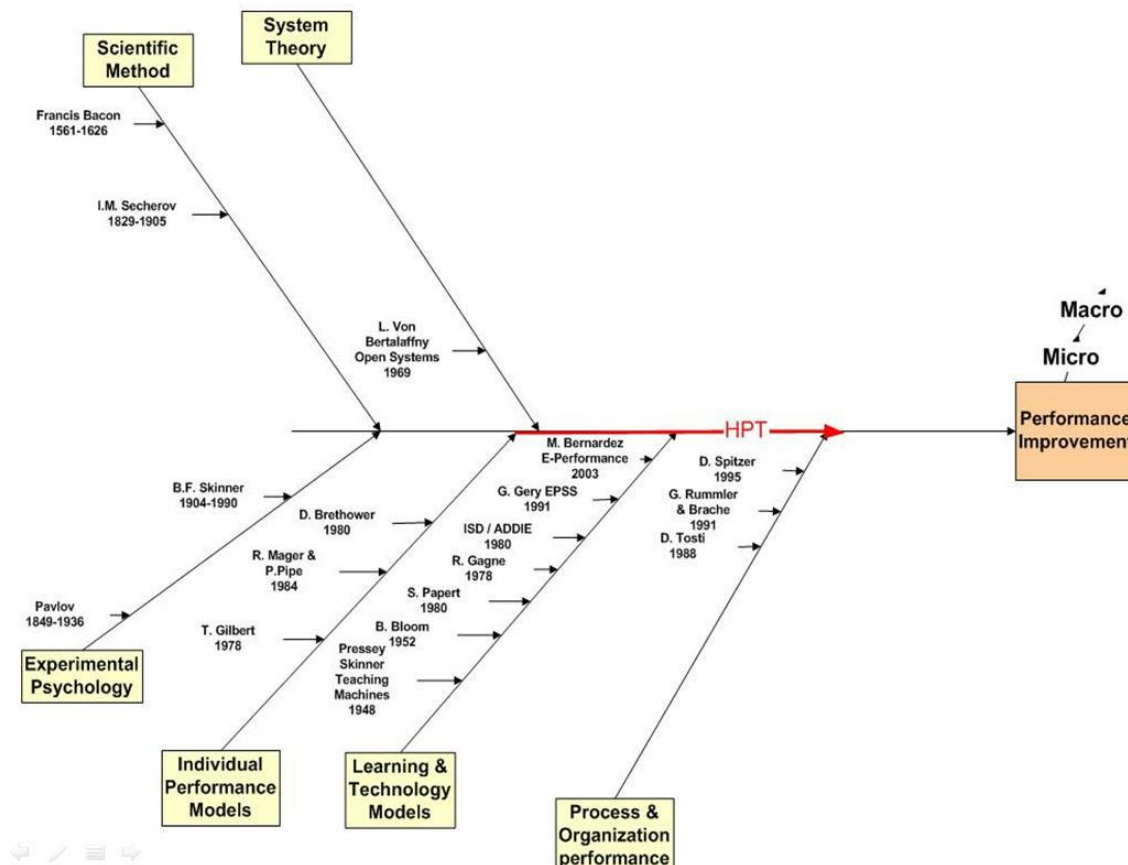
Table 2: Geary Rummler’s organizational “nine boxes” (Rummler & Brache, 1995)

| | | Performance needs | | |
|-------------------|--------------------|--------------------------------------|-----------------------------|-------------------------|
| | | Goals | Design | Management |
| Performance level | Organization level | Organization objectives & indicators | Organization design | Organization management |
| | | ■ Macro | ■ Macro | ■ Macro |
| | | ■ Micro | ■ Micro | ■ Micro |
| | Process level | Process objectives & indicators | Process design | Process management |
| | | | | |
| | Job level | Job and task objectives & indicators | Job and task design | Job and task management |
| | | | Resources allocation system | Resources management |
| | | Resources levels & requirements | | |
| | | | | |

Rummler & Brethower's AOP included at the lowest level –job level- all key elements of Gilbert's BEM models, although not organized in *Six Boxes*¹⁹.

Other performance system models –such as Tosti's *SCAN* (ISPI, 2006) and Langdon's *Language of Work* (Langdon, 2000) followed AOP's in its attempt to provide a framework for analyzing a whole organization as a performance system. The new *organizational performance* approach emphasized the importance of vertical –top-bottom, from strategy to operation- and horizontal –cross-functional- *alignment* of all *organizational* elements, processes and functions as a pre-requisite for improving not only individual or subsystems performance but also organizational results.

Figure 6: HPT core



Very soon, new realities from practice and theory outgrew the original “HPT” field. The organizations, technologies and workplaces that served as models for HPT pioneers’ original research and models from 1910 to 1960s, started to decline, disappear or radically change in the 1980s. General Motors, General Electric and IBM were no longer paradigms of efficient organizations but oversized bureaucracies losing market to smaller, nimbler competitors like Toyota Motors, Siemens and Microsoft.

¹⁹ Although Gilbert's BEM formulation separates “environmental control” factors –see Table 2-, these are considered as part of the “job context” as in a “job description”. The AOP model goes much further by differentiating “job conditions” such as these from process and organizational levels.

The loss of leadership and market share to Japanese and Asian rivals in the 1980s had a shock effect on American business similar to what the Soviet Sputnik launch of 1958 had on education and airspace organizations.

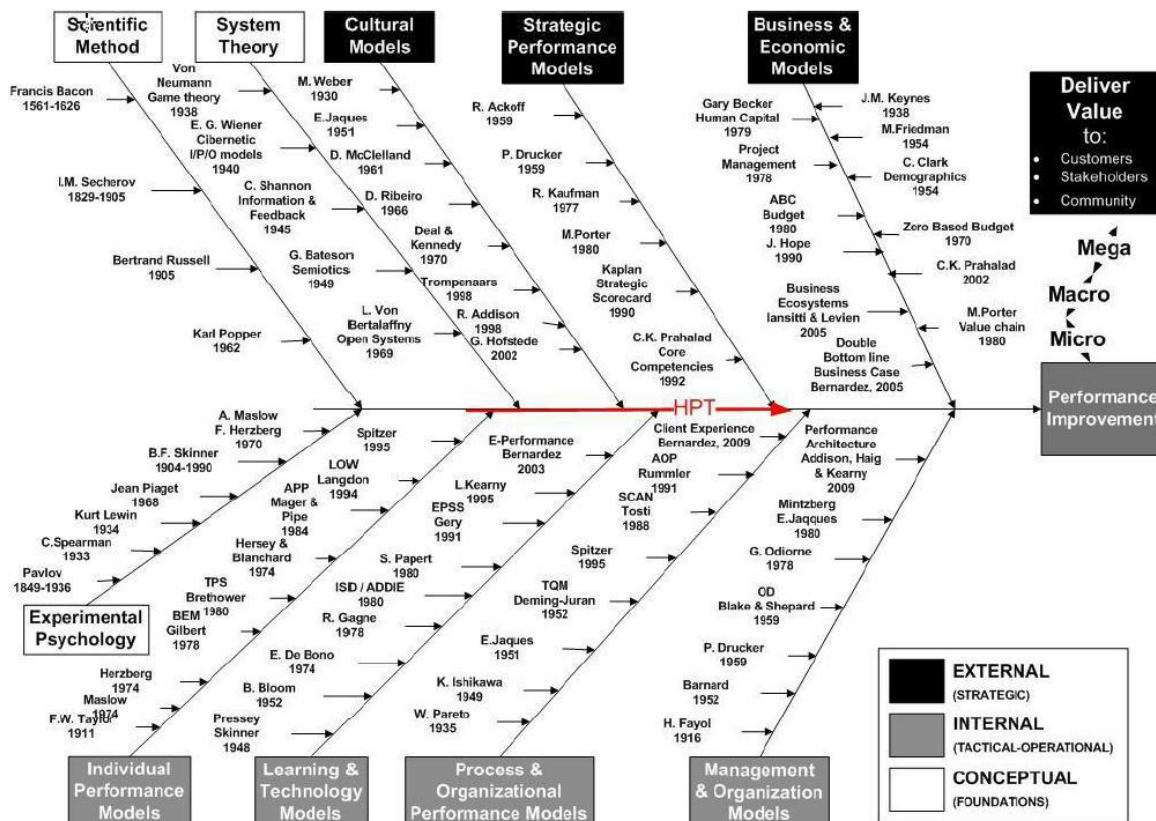
Finding themselves behind of their new competition in pricing, quality, productivity, costs, workforce morale and overall performance, American and European corporations engaged in a decade -1980-1990- of frantic downsizing, resizing, restructuring, reengineering, mergers and acquisitions.

Beyond HPT: New contributions and new perspectives

While the performance movement focused on improving internal processes such as learning and manufacturing, other pioneers looked outward to the challenges posed by new realities in the *society, economy, culture* and *market*.

Figure 7: Beyond HPT: integrating disciplines and contributions

Figure 1: Beyond HPT: factors and contributors to performance improvement and value creation



New disciplines: from business practice to theory

The emergence of formidable competition from Japan brought back to the forefront of America's attention the pioneer work of Deming and Juran's *quality school* –first adopted in Japan and later re-introduced to America and Europe-, the *management and organization school* that would have its most influential voice in Peter Drucker, the *Economic Models* for business introduced by Porter and C.K. Prahalad, the *Social Prophecies* announced by Drucker, Toffler, Naisbitt and Friedman and the *strategic performance models* pioneered by Roger Kaufman, Ackoff, Porter and Kaplan.

The contributions of these disciplines to performance improvement theoretical and practical foundations are indispensable to guarantee sustainable, value-adding individual, organizational and societal performance in an integrated, “flattened” world.

Expanding the HPT roots

*“There are more things in heaven and earth, Horatio
/Than are dreamt of in our philosophy.”
Hamlet
Act 1, Scene 5*

(Shakespeare, 1623)

In order to respond to new realities and challenges, the original Human Performance Technology field must expand beyond narrow definitions of its psychological, scientific and systemic foundations and “NIH²⁰” resistances.

In the ***psychological field***, the contributions of *psychometrics* –from Spearman to Myer-Briggs- and new *frameworks to analyze aptitudes* such as Howard Gardner's *multiple intelligences* (Gardner, 1999), Daniel Goleman's *Emotional Intelligence* (Goleman, 1995), Paul Stoltz's *Adversity Quotient* (Stoltz, 1995), new developments in the analysis of *learning styles* (Buckingham & Clifton, 2001) Robert Bandura's *self-efficacy* models (Bandura, 1997), Zemke's studies on *generations at work* (Zemke, Raines, & Filipczak, 2000) and Guglielmino's research on *Self-Directed Learning* (Guglielmino & Murdick, 1997) can provide valuable foundations to adult learning models.

In the area of ***learning and technology models***, Seymour Papert's developments and models in using *computers to develop thought processes* (Papert, 1994), Gloria Gery's *Electronic Performance Systems* (Gery, 1992) and this author's *e-performance* models (Bernardez, 2003) provided new foundations for working with adults in technological workplaces.

In the ***process and organizational performance*** area, the contributions of Pareto, Ishikawa, Deming, Juran's *quality school*, Eliott Jacques and the *organizational development school* and Peter Senge's *learning organization* concept added new

²⁰ “Not Invented Here”: patent industry lingo that identifies –and sometimes penalizes- foreign contributions

dimensions –both from the hard, statistical and the soft, psychosocial approaches- to better understand and handle organizational performance systems.

Management and organization

As the nature of work changed consistently since the early days of industrial organization, so did management and organization models. Management and organization models reflected –rather than anticipated- the trends and requirements of successful business models.

From 1850 to 1915, as organizations grew in size and scope, they borrowed organizational principles and models from the military organizations. David C. McCallum designed the first organization chart for the New York and Erie Railroad in 1848, following the model of the US Army. In France, Henri Fayol, another military engineer and successful production manager published in 1916 a functional organization model that prevailed for the next 30 years.

Fayol's military concepts of *command and control* and *functional division* of work helped turn farm hands dedicated to physical work into an industrial workforce. (Fayol, 1916)

Towards 1915, Henry Ford's assembly line, mass production and vertical integration required to de-skill and fragment work into elemental, repetitive actions that Taylor and Gilbreth optimized through the time and motion and process standardization of the scientific management school. (Wren, 2005)

Between 1930 and long into mid-1960s, *General Motors*, *Sears*, *AT&T* and *IBM* shifted the business focus from manufacturing towards service and market expansion –first within the US, globally after WWII- and catered to market segments with multi-divisional organization in competing business units.

Alfred P. Sloan, Chester Barnard's, George Odiorne's and the young Peter Drucker's responded to the challenge by developing new methods for managing and supervising the new workforce of better educated “white collar” workers.

This was the “golden age” of management methods –from Barnard and Drucker's definitions of *managerial work and managerial functions* to Odiorne's *Management By Objectives (MBO)* to McKenzie's *time management*.

It was also time to change the “command and control”, autocratic management model from the First World War cavalry-and-bayonet armies for a new paradigm for the more democratic, car-and-comfort oriented world of the postwar Consumer's society.

As the large workforce unionized, workers' role in industrial relations turned critical for success , Elton Mayo, Abraham Maslow and Douglas McGregor's studies on the motivation to work and human relations became a new driver for managerial theory and practice. (Matteson & Ivancevich, 1999) (Van Eynde, Hoy, & Van Eynde, 1997)

New frontiers for the theory and practice of performance improvement

The 1970s oil crises and social turmoil around the world were the opportunity for new competition to push back the Post-War American dominance. Japan's car makers brought not only fuel-efficient, more reliable cars, but innovative management methods –such as Deming and Juran's TQM- based on teamwork, collaboration and long-term goals instead of Darwinian, internal competition.

The shock of losing to Japan almost a third of the US and EU car and electronics markets in less than ten years sent all major American and European companies into embracing new methodologies to recover their competitiveness.

The early 1980s was the era of resizing, downsizing, restructuring, mergers and acquisitions and dramatic turnarounds. Ohno's kan ban, kaizen, lean manufacturing and just-in-time methods and Rummler and Hammer & Campy's reengineering became widely applied to American and European corporations with varied results.

In his 1994 book *Competing for the future*, management guru C.K. Prahalad presciently summarized the limitations of downsizing and reengineering:

“The simple point is that getting smaller is not enough. Downsizing, the equivalent of corporate anorexia, can make a company thinner; it doesn't necessarily make it better.” (Prahalad & Hamel, *Competing for the future*, 1994, p. 11). *The point is that in many companies, process reengineering and advantage-building efforts are more about catching up that getting out in front”* (Prahalad & Hamel, *Competing for the future*, 1994, p. 13). *Successfully managing the task of organizational transformation can make a firm lean and flat-footed; it cannot turn a firm into an industry pioneer. And, although being a fast follower is better than being a slow follower, neither is a recipe for extraordinary growth and profitability. To be a leader, a company must take charge of the process of industry transformation.”* (Prahalad & Hamel, *Competing for the future*, 1994, p. 19)

Towards 1995, with the generalization of the *knowledge-based economy*, technology companies such as Microsoft, Sun Oracle and Apple became the new organization and business paradigms. Virtual organizations and teams collaborating online across geographic and cultural boundaries in multi-organizational value chains replaced overextended, slower multinational like IBM and AT&T, forcing them to seek innovation through smaller, independent spinoffs and alliances.

Managing virtual teams with “*creative class*²¹” workers to create new knowledge emerged as the new challenges for 21st century companies competing for an increasingly diverse “long tail” market of active “*prosumers*²²”.

²¹ Term coined by Richard Florida to describe three categories of knowledge workers: scientists and artists, technical specialists and clerical workers- that together represent the largest segment of US and OECD workforces -45%- (Florida, 2002)

²² Term coined by Chris Anderson to describe self-employed, entrepreneurial consumers that buy products and services to create their own. (Anderson C. , 2006)

New frontiers for the theory and practice of performance improvement

The 21st century work environment requires a workforce able to operate technology-intensive, virtual performance systems such as *Customer Relations Management – CRM-*, *Enterprise Resource Planning –ERP-*, *Content Management Systems –CMS-* and *eLearning*, and management and performance models such as Gloria Gery's EPSS, Hubert Saint-Onge *knowledge management* and Bernardez' *e-performance*. (Bernardez, 2007)

Table 3: Changes in work, management and organization paradigms 1850-2008

| | Business paradigm | Nature of work | Organization models | Management models | Performance Focus | Business Focus |
|-----------|--|---|---|--|---|---|
| 1850-1915 | Railroads, Steel Mills, Military, Mining, Oil, Meat packing | Physical Manual Craftsmanship | Large corporation Functional organization (McLelland) | Henri Fayol (command and control) | Division of labor | Expansion Manufacturing |
| 1915-1930 | Ford Motors, Du Pont, US Steel Assembly line, vertically integrated manufacturing | Physical Manual De-skilled, elementary, repetitive | Assembly line Manufacturing | Scientific management F. Taylor F. Gilbreth Urwick | Optimizing assembly work (time & motion, process) | Manufacturing Mass production Standardization |
| 1930-1950 | General Motors, AT&T, IBM, Sears Mass-marketing large corporation | Blue and "white" collar work (engineering, management, sales) Supervisors and managers "Organization man" | Divisional Sales and Manufacturing Internal competition One-size-fits all mass marketing | C. Barnard A.P. Sloan Costs, Financial Management MBO (Odiorne) Time management (McKenzie) | Optimizing sales, costs, profit Managerial jobs White collar jobs | Mass Marketing Global expansion Standardize consumer habits |
| 1970-1990 | Toyota, 3M General Electric Commercial Banking and consulting | Knowledge worker Self-directed teams Goal-based management | Horizontal, flexible, cooperative organization (Japan) Business Units, decentralized "adhocracy" | Kan ban, JIT, lean manufacturing (Ohno) Boundary-less organization (Welch, | Communication Teams Self-direction Use of technology | Global competition Adaptation Competitive advantage Strategy |

New frontiers for the theory and practice of performance improvement

| | | | | | | |
|--------------|---------------------------|----------------|-------------------------------------|----------------------------|---------------------------------|--------------------------------|
| | | (US) | Ashkenas,) | Reorganization, adaptation | | |
| | | | Workouts (Welch, Ulrich) | | | |
| | | | Reengineering (Rummler, Hammer) | | | |
| | | | Strategy (Porter, Kaufman, Drucker) | | | |
| | | | Six Sigma | | | |
| 1990-Present | Microsoft, Silicon Valley | Creative class | Intellectual Capital intensive | BOP strategies (Prahalad) | Outsourcing Knowledge factories | Global, international strategy |
| | Virtual organizations | | Virtual organization | Megaplanning (Kaufman) | Online collaboration | Market creation strategy |
| | Investment banking | | Global value chain | Virtual work (Florida) | IC creation | Long tail mktg |
| | | | BOP markets | | | Mega strategy |
| | | | | | | |

Strategic Performance Models

*“All value comes from outside the organization.
Inside the organization there are only costs”*

(Drucker, Management: tasks, responsibilities, practices, 1973)

As the world economy started to expand globally –during the Post WWII years- and to integrate in a single global market –with the opening of the former Communist economies to global trade and entrepreneurial practices during the 1990s-, organizational performance models became increasingly insufficient. Strategic performance –define as the ability to add value to clients and society- demanded models that reflected such value and societal and client performance as well.

Among all the original performance pioneers that founded NSPI/ISPI, Roger Kaufman remained relatively solitary in his prescient insistence on defining and designing performance systems “from the outside-in”, starting from identifying gaps between societal results and deriving from them organizations’ missions and goals.

The *strategic performance* approach –started by Kaufman’s as early as 1969 (Kaufman, Corrigan, & Johnson, 1969) (Kaufman, 1972) – remained marginal during the heyday of

the “performance engineering” movement –strongly focused during the eighties in streamlining large organizations’ performance-. In spite of being a lifelong conservative republican, Kaufman was derided as “heart-bleeding humanism” by the Harvard-MBA and Porter’s competitive advantage strategic schools, focused on maximizing short-term profits.

Only Peter Drucker (Drucker, 1973) (Drucker, 1985) –insisting in the social responsibility of every business- and C.K. Prahalad (Prahalad & Hamel, 1994) –showing the potential of developing emerging markets- sided with Kaufman in thinking strategy beyond single organizations boundaries.

The explosion of the new global, multi-polar economy vindicated strategic performance pioneers’ vision, as 4 billion-people strong emerging economies joined the global markets and redefined global competition. C.K. Prahalad urged multinational corporations develop new markets and reinvent industries by introducing new models for developing *Bottom of Pyramid* (BOP) markets, based on “serving the poor, profitably”. (Prahalad & Hammond, 2002) (Prahalad C. K., 2005)

Bangladesh economist and 2006 Nobel Peace Prize laureate Muhammad Yunus proved true Prahalad’s theories with *Grameen bank*’s success in both lifting 100 million clients out of poverty through entrepreneurship and making profits with record levels of return on micro loans. (Yunus, Banker to the poor: micro-lending leading the battle against world poverty, 2003) (Yunus, 2007)

At the turn of the 21st century, leading companies such as *GE, BP, Google, Microsoft, Starbucks* , *Whole Foods* and those grouped in the *Dow Jones Sustainability Index* (DJSI, 2008) have developed long term strategies based on “*doing well by doing good*” and actively seeking involvement in developing clients, markets and communities success as the key factor to sustain and advance their own interest.

New developments such as the double-bottom line business case developed at the Sonora Institute of Technology helped integrate Kaufman’s *Organizational Elements Model* –OEM- (Kaufman, 2006), Rummler and Brethower’s *Anatomy of Performance* –AOP- (Brethower, 1972) (Rummler & Brache, 1995) to create wealth and develop clients and markets through multi-organizational value chains. (Bernardez, 2005) (Bernardez, 2008)

The strategic performance models expanded the scope of performance improvement by aligning societal value added to organizational, process and job performance. (Bernardez, 2008)

Table 4: Performance Levels (Bernardez, 2008)

| Level | Objectives | Design | Management |
|-------|-------------------------------|--------------------|-------------------------|
| | Goals, standards & indicators | “How to”, programs | Implementation, control |

New frontiers for the theory and practice of performance improvement

| | | | |
|--------------------------------|--|--|--------------------------------|
| Societal/External(Mega) | Mega objectives & indicators | Social & organizational plan strategic directions related to | Social and regional management |
| ■ Community | ■ Community | ■ Community | ■ Market |
| ■ Clients | ■ Market | ■ Market | ■ Policies |
| ■ Market | ■ People | ■ People | ■ Regulations |
| ■ Suppliers | ■ Suppliers | ■ Suppliers | |
| ■ Value chain | | | |
| Organization | Organization objectives & indicators | Organization design | Organization management |
| ■ Macro (org. results) | ■ Macro | ■ Macro | ■ Macro |
| ■ Micro (products) | ■ Micro | ■ Micro | ■ Micro |
| | | | |
| Processes | Process objectives & indicators | Process design | Process management |
| ■ Internal services | | | |
| | | | |
| People & resources | ■ Job and task objectives & indicators | ■ Job and task design | ■ Job and task management |
| ■ “Six boxes” | ■ Resources levels & requirements | ■ Resources allocation system | ■ Resources management |
| ■ Individual performer | | | |

Economic Models

With the same rigor that experimental psychologists applied to the study of **learning and work behavior**, new disciplines such as *Behavioral Economics*, *Social Psychology*, *Political Sciences* and *Marketing* provided a new framework to explain and predict **consumers, investors, markets, government’s behavior** in the economic context by combining their own quantitative tools and methodologies with experimental psychology, group and organization theory and motivational research.

Large areas of economic studies related to business performance –such as Gary Becker’s²³ concept of *Human Capital* (Becker, 1993), James Buchanan²⁴’s theory of *public choice* regarding governmental decision-making (Buchanan, 2000) and Bryan Caplan²⁵’s recent studies on “rational irrationality” influence of bias and ideology in voters’ reactions to trade, immigration or employment (Caplan, 2007) or Von Neumann

²³ Nobel Prize of Economics 1992

²⁴ Nobel Prize of Economics 2000

²⁵ Associate professor of Economics at George Mason University and researcher on economic behavior

New frontiers for the theory and practice of performance improvement

and Morgenstern's *games theory* (Von Neumann & Morgenstern, 2007) – have provided deeper understanding of human behavior and performance in macroeconomic settings.

This convergence of multiple new disciplines in the performance field is essential to study and understand the external social, market and human realities that condition and create businesses and organizations.

Clinical and experimental studies on group behavior provided by social psychology and psychotherapy were the basis for *organizational development* (Jacques, 1951) (Jacques, 1998) with its studies on dysfunctional organizations and organization behavior and *organizational culture* schools (Deal & Kennedy, 1999) (Hofstede, Pedersen, & Hofstede, 2002) (Trompenaars & Hampden-Turner, 1998) with their applications to *change management* (Daniels & Mathers, 1997) and *mergers and acquisitions* (Carleton & Lineberry, 2004).

Social Prophecies

From its very beginning, performance improvement foundations and models were heavily influenced by “social prophecies”. B.F. Skinner extrapolated his operating conditioning models to an entire community y Walden II.

Industry and business pioneers from Robert Owen to Henry Ford and George Pullman modeled towns and communities for their workers –sometimes with mixed results, such as Ford's clashes with unions and Pullman's fateful strikes-.

During the post WWII expansion, sociologists like Vance Packard and business consultants like Peter Drucker analyzed the new social trends and produced very influential forecasts –such as Packard's “organization man” and “Consumer's society” and Drucker's “managerial” and “knowledge” workers functions.

Towards the 1980s, business consultants like McKinsey's Tom Peters and Waterman - “*In search of excellence*”- , Boston Consulting Group's Michael Porter -“*Competitive Advantage*” and “*The competitive advantage of Nations*”- and University of Michigan's C.K. Prahalad -“*Competing for the future*”- and Ron Ashkenas –“*The Boundaryless organization*”- introduced new visions and models to understand the new rules of global competition that had powerful influence on business thinking and practices.

From a larger perspective, other analysts provided broader perspectives of future social and business trends, such as Naisbitt's *Megatrends*, Toffler's *Third Wave* and –more recently- Thomas Friedman's *globalized and flattened world*, C.K. Prahalad's *BOP markets*.

Other influential authors focused on the changes and trends in consumers' behaviors and decision-making processes –such as in the case of Mark Penn's *Microtrends*, Chris Anderson's Long Tail or Malcom Gladwell's *Tipping point*.

Table 5: Social prophecies (Bernardez, 2008)

| Microtrends (Penn) | Megatrends (Toffler) | Flatteners (Friedman) | BOP (Prahalad) | Small Business (Barreto, SBA, Bernardez) |
|-----------------------------------|---|--|--------------------------------|--|
| 1. Commuter couples | 1. Wealth, not just profits | 1. Globalized market, free trade | 1. Price-performance | 1. Planning. Not winging it |
| 2. Extreme commuters | 2. Three Waves, three worlds | 2. WWW goes public | 2. Hybrid solutions | 2. Challenge CW |
| 3. Stay-at-home workers | (First: Agrarian, Second: Industrial society, Third: Information society) | 3. Work Flow software | 3. Scalable | 3. Build niche, differentiation |
| 4. Stained glass ceiling breakers | | 4. Open-Sourcing | 4. Eliminate resource wastage | 4. Avoid copying and “bench-marking” |
| 5. Sun-haters | 3. Clash of speeds | 5. Outsourcing | 5. Functionality options | 5. Manage and position in ecosystem |
| 6. Long attention spanners | 4. Leaders & laggards | 6. Off shoring | 6. Process innovation | 6. Manage “stages” of development |
| 7. Second-home buyers | 5. Inertia | 7. Supply-chaining | 7. Deskillling | |
| 8. Smart Child left behind | 6. Hyper speed | 8. In sourcing | 8. Consumer education | |
| 9. LAT couples (UK) | 7. Synchronization | 9. In-forming | 9. Hostile environments -ready | |
| 10. French teetotalers | 8. Future of job | 10. Digital, Mobile, Personal, Virtual | 10. User-interfaces | |
| | | | 11. Accessibility | |
| | | | 12. Rapid evolution | |

Such social prophecies or future forecasts became a key factor for strategic business planning during the late 1990s and the beginning of 21st century. As the speed of change accelerated, business leaders turned their attention from streamlining their current performance systems –either by restructuring, downsizing, reengineering or outsourcing- to redefining their industries for the coming decades.

In 1995, C.K. Prahalad recommended business leaders to start competing for the future 10 years instead of just for the present, focusing on four key factors: “(1) *an understanding of how competition is different*; (2) *a process for finding and gaining insight into tomorrow’s opportunities*; (3) *an ability to energize the company top-to-bottom for what may be a long and arduous journey into the future and* ; (4) *the capacity to outrun competitors and get to the future first, without taking undue risks*” (Prahalad & Hamel, Competing for the future, 1994, p. 23)

Cultural Models

Business and organizational practices create their own internal “*way of doing things*”, described as *organizational culture*. (Deal & Kennedy, 1999) . Each organizational culture is defined by values and beliefs shared by organization members and by the tacit practices and rules adopted and created over the years.

By analyzing the relations between organizational culture, performance systems and actual results different meta-analysis studies concluded that *culture is usually an*

emergent consequence of successful performance systems and results rather than a cause. (Kotter & Heskett, 1992)

Strong **corporate cultures** emerge as a characteristic of industry leaders over time and become a part of their decision-making and planning styles. *GM, IBM, Andersen, McKinsey, GE, Citibank, Goldman Sachs* and *Microsoft* are examples of strong, collective cultures built on decades of successful track records.

Retail and service-focused companies, such as *Starbucks, McDonalds, Whole Foods, Google, JetBlue*, and *Southwest* develop **brand cultures** from their inception, as part of its own brand definition, and based on their unique client experience.

Companies like *Wal-Mart, Disney, Ford, Cartier, Chanel* and *Amazon* developed **signature-cultures**, closely related to their charismatic, iconoclastic and idiosyncratic founders, which over time –and with the founders’ succession- turned corporative and brand-based.

From “performance engineering” to “performance architecture”

Improving organizational performance requires thus not only redesigning the performance system using performance engineering models, but also to modify the “architecture” of the organization –its style, norms, values, beliefs and expectations- using a completely different set of models, tools and procedures.

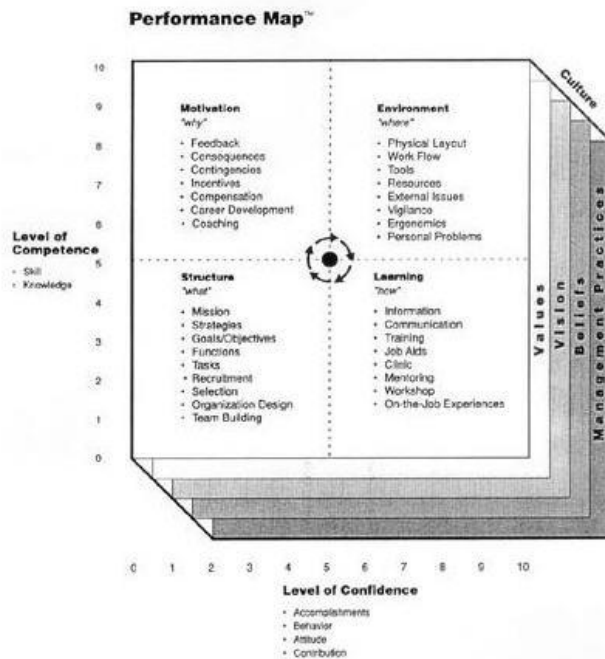
During 1990s, new contributions from Addison, Tosti, Lineberry, Carleton and Daniels in the HPT field introduced the concept of *organizational culture* as a component of the performance system.

These new HPT/PI approaches helped visualize the role of “soft” components of performance –such as values, practices and behaviors- neglected by engineering-driven models.

Roger Addison’s *performance architecture* model includes culture as a third dimension supporting performers’ *competence* and *confidence* levels. (Addison & Johnson, Performance Improvement Global Network Chapter, ISPI, 1998)

Addison’s model provides a *situational* framework to relate individual performance factors –such as skills and knowledge- to each organization’s internal culture, improving decision-making and implementation by balancing objective, rational variables with subjective, social and emotional variables –such as motivation, beliefs, values and managerial practices-.

Figure 8: Culture as organizational architecture (Addison & Haig, The Performance Architect's Essential guide to the performance technology landscape, 2006)



The *performance architect* map includes four cultural variables:

1. *Values*
2. *Vision*
3. *Beliefs*
4. *Management practices*

Culture includes policies, procedures, stories, legends, corporate identity, status and power affecting performance.

Cultural variables provide a *context* to performers' levels of *competence* – ability to perform- and *confidence* – motivation to perform- that is critical to make performance sustainable.

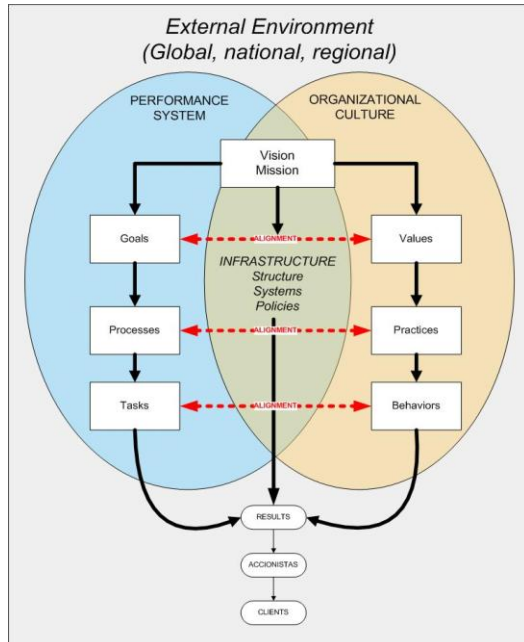
If the purpose of Gilbert and Rummel's "performance engineer" was to design a more rational and effective performance system, the purpose of Addison's "performance architect" is to make implementation smoother and reduce resistance to change and conflict.

Cultural models provide new tools for managers and consultants involved in tactical and operational, day-to-day implementation.

Cultural alignment

Analyzing the high rate of failure in mergers and acquisitions, Carleton and Tosti noted that while designing a performance system is an engineering, rational process, implementing such system in practice requires different degrees of cultural change that involve emotional attachment, previous experiences and feelings of loss of control, job security and expectations. (Carleton & Lineberry, 2004) They concluded that a "*cultural due diligence*" preliminary assessment might help identify cultural issues – such as resistance to change or negative expectations- before reengineering the performance system.

Figure 9: Aligning culture and performance system (Tosti & Amarant, 2006)



Each organization has its own “way of doing things” (Carleton & Lineberry, 2004) or *organizational culture*, with pre-existing *Values, Practices and Behaviors* that mirror the rational *Goals, Processes and Tasks* defined by the formal performance system.

In order to ensure successful implementation and sustainable change, “*performance engineers*” must turn into “*performance architects*” and perform a “cultural due diligence” to make sure that the new performance system and the organizational culture are aligned and support each other.

Cultural indicators are mostly tacit, unconscious and “invisible” to conventional business and engineering metrics. In spite of that –and in part because of it–, successful design and implementation of changes in the performance system must be accompanied by cultural change and alignment.

Carleton and Lineberry’s *cultural alignment* model responded to the growing challenges of (a) implementing significant changes in traditional performance systems, (b) conducting business and hire personnel across cultures and (c) integrating organizations with different histories and cultures during consolidation periods through successful mergers and acquisitions²⁶ and (d) making change sustainable and part of the system. (Tosti D. T., 2000)

The road ahead: exploring new frontiers

Focus on value creation

“Our organizations are getting better and better at doing things that shouldn’t be done in the first place”

Peter Drucker

(Drucker, *The new realities*, 1988)

Performance is at best, an ambivalent, “value-free” concept. Being performance a means to achieve ends, improving performance can certainly do as much damage as good, depending on the nature and impact of its desired results.

²⁶ Carleton and Lineberry comment that “In their 1999 study of 190 CEOs and CFOs experienced in global acquisitions, Watson Wyatt found that cultural incompatibility is consistently rated as the greatest barrier to successful integration.” (Carleton & Lineberry, 2004), Page 14.

New frontiers for the theory and practice of performance improvement

Cycles of “boom” and bust such as the dot.com’s collapse of 2000 or the chain of bankruptcies that ended with Enron and Arthur Andersen, as well as the more recent – and still unfinished- 2008 global financial meltdown prove painfully that “improving performance” can actually exacerbate a wrong course of business and contribute to scale up the destruction of wealth.

Defining “worthy” performance –as Tom Gilbert recommended before starting any “improvement” effort requires shifting the focus from optimizing means –such as processes, functional subsystems and particular organization’s self interest- to evaluating the ultimate ends to be pursued: value creation.

Shifting the emphasis from “improving” means –such as existing performance- towards defining, measuring and accomplishing ends that create and add *lasting* value to society, organizations and individuals requires to develop new frameworks and success indicators.

Starting with Peter Drucker and Roger Kaufman’s prescient directions forty years ago, a growing concern with amoral, myopic and self-destructive “middle of the road” theories and fads focused on “performance optimization” has gained full force at the beginning of our 21st century as a movement towards corporate social responsibility, sustainability and customer-centric organizations, epitomized in Google’s “do no harm” mission statement.

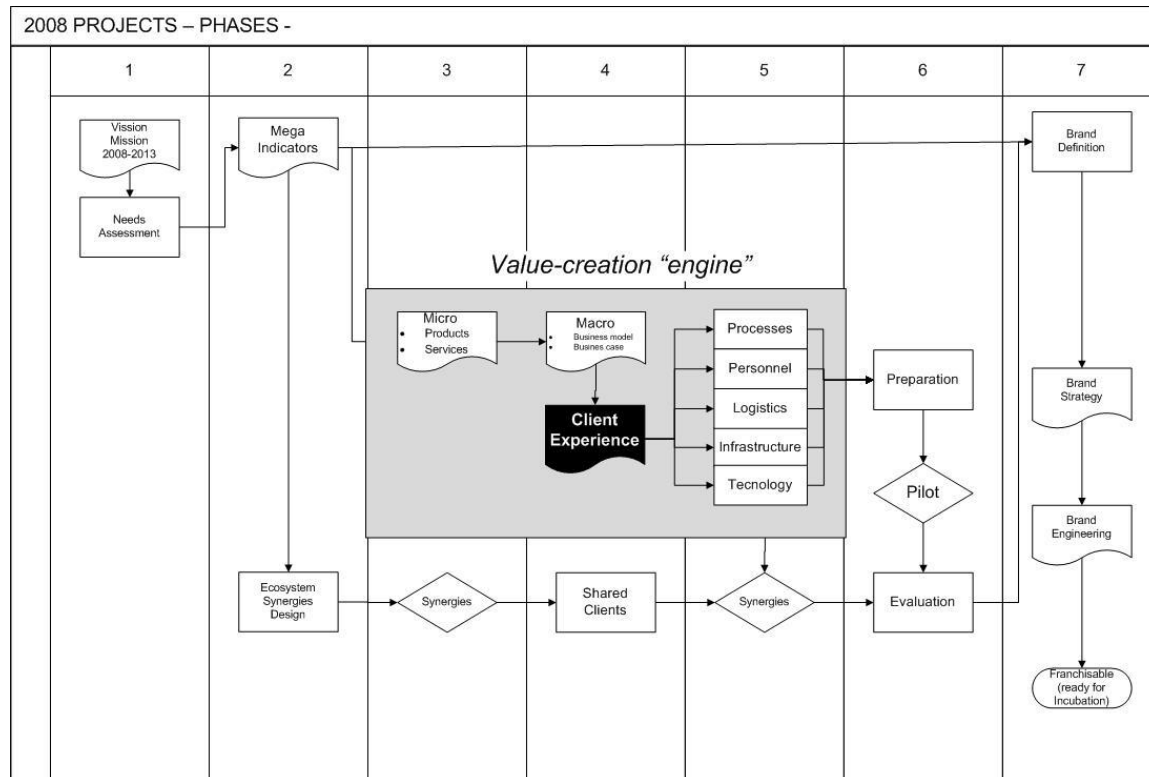
Approached and tools focused on sustainable value creation such as Kaufman’s Megaplaning, Prahalad’s BOP strategies or Porter’s Strategic Philanthropy are being embraced by leading companies such as BP’s “Beyond Petroleum”, GE’s “green strategy”, IBM’s “global community” commitment or Google’s “do no harm”.

New lines of research and practice such as World Banks’ economists work on redefining the wealth of nations (International Bank for Reconstruction and Development / The World Bank, 1998) (International Bank for Reconstruction and Development / The World Bank, 2006) and the development of new business performance metrics such as the Dow Jones Sustainability Index (DJSI, 2008) provide a promising framework at the macroeconomic level to guide governments, market regulators and stockholders to define and measure sustainable wealth.

At the microeconomic level, tools and metrics such as the double-bottom line business case and models that link sustainable profit to social impact, subordinating organization’s benefits to client’s benefits (Henriques & Richardson, 2004) (Prahalad & Hammond, 2002) (Bernardez, 2005) (Bernardez, 2008) are key to help companies redefine and measure their “performance” in terms of measurable value added to clients and society.

New approaches to performance engineering focused on value creation start from defining a model of clients’ experience –the “moment of truth” in which value is –or not- effectively delivered to the customer- as the starting point for process engineering instead of the traditional other way around centered in subsystems optimization. (Bernardez, 2008)

Table 6: Value creation engine and process



Following Bernardez’s business creation process sequence, Table 6 shows the previous steps in our business case: –**Vision and Mission design** (Phase 1), **Mega-level indicators** (Phase 2) , **Micro-level products and services** (Phase 3) and **Macro-level business case and revenue model** meeting the client in the **client experience** (Phase 4). (Bernardez, Minding the business of business: tools and models to design and measure wealth creation, 2008)

Serving proactive new consumers

In the last decades of the 20th century, under the decline of the old *mass-market categories*²⁷, nimbler and tech-smart clients have been carving “*long-tail*”²⁸ micro-niches in their globalized, flattened and intercommunicated markets and cultures. (Friedman T. , 2005) (Penn & Zalesne, 2007)

²⁷ Vance Packard in *The Status Seekers* (1961) and David Halberstam in *The Fifties* (1993) described the phenomenon of mass consumption –from fast food chains like McDonalds, to standardized housing developments like Levittown as a characteristic of the mass-marketing oriented society from 1950 to 1990s’ (Packard, 1961) (Halberstam, 1993)

²⁸ Term coined by Chris Anderson to describe the shift in 21st century customers preferences from massive sales of a few “top sellers” to selling a few units of thousands of products to thousands of specialized niches (Anderson C. , 2006)

Traditional management and performance improvement methods based on the GM paradigm developed by Alfred P. Sloan almost 75 years ago²⁹ are better suited to “improve” the performance of aging organizations designed to serve 20th century, standardized, passive “consumers” rather than to support new, nimbler organizations³⁰ able to keep up with 21st century’s smarter, challenging “*prosumers*”.

21st century clients are no longer the passive, standardized consumers stereotyped by conventional mass marketing but tech-smart, independent “*prosumers*”³¹ that not only demand highly specialized, personalized products and services, but also participate actively in their creation, distribution and management. (Anderson C. , 2006) (Prahalad C. K., 2005)

Prosumers act as business partners in value creation and delivery both in developed markets –think of the success of open-source software, Web 2.0 communities, online music and video creation and distribution- and BOP markets –consider *Grameen*’s bank microloans communities of prosumer women in Asia and Latin America (Yunus, 2003), or cell phone users in African and Asian BOP markets (Prahalad & Hammond, 2002)-, helping to lift people out of poverty and thus creating and expanding markets through non-conventional use and delivery of existing products and services.

Transforming culture into intellectual capital

In a globalized world, organizations work in multiple markets with different languages and business cultures, through a multi-cultural workforce.

The traditional “*one firm, one language*”³² American multinational business paradigm has been replaced by cultural models such as Font Trompenaars’ *multicultural management* that focus on encouraging and managing cultural diversity to succeed doing business in multiple geographic markets, customers and employees. (Trompenaars & Hampden-Turner, 1998)

On the other hand, analyzing and capturing the uniqueness of national traditions and art not only helps understanding customer and employees’ choices and behaviors, but also *provides products value and differentiation* –think of *Starbuck*’s European-style coffee shops, *Daimler Benz* German engineering or *Modernistic* building design-. *Culture –high and lowbrow- is an intellectual capital asset.* (Bernardez, 2008)

²⁹ Sloan created a business model that was soon replicated by all Detroit competitors and translated into other manufacturing companies. (Sloan, 1963, 1999) Large manufacturing companies are still the most common models for “business cases” at MBA schools. (Mintzberg, 1994)

³⁰ Large business turnarounds, mergers and acquisitions aimed to “teach giants to dance” –using Rosabeth Moss Kanter’s expression- are being replaced by spinning off and starting up new, nimbler organizations. (Carleton & Lineberry, 2004) (Moss Kanter, 1990) (Gertsner, 2002)

³¹ Term introduced by C.K. Prahalad and Michael Anderson to describe clients that purchase products –such as cell phones- to produce goods or services –such as contacting clients-. (Prahalad C. K., 2005) (Anderson C. , 2006)

³² That was the “motto” at Arthur Andersen and IBM, two classical examples of centralized, uniform corporate cultures of the 1950-1970 mass-market period. (Stevens, 1984)

Designing business ecosystems

The challenge of 21st century economy is not restructuring a business, but to reinvent entire industries, not to improve short-term profit but to create wealth, not to reorganize inside the existing organization, but to organize multi-organizational, flexible and scalable value chains.

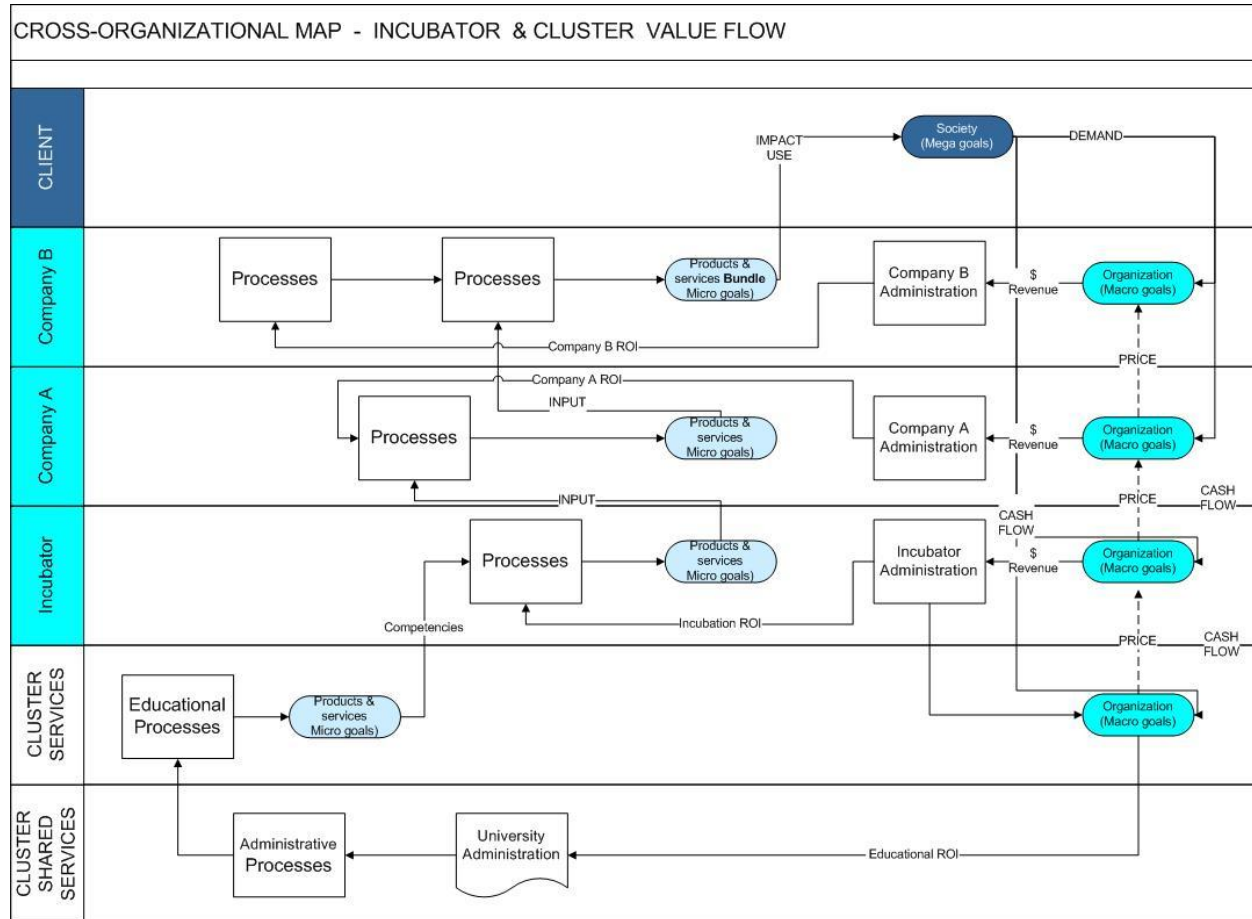
In the 21st century economic scenarios, multiple companies coordinated as value-chains in business ecosystems create, produce and deliver a wider variety of products and services at lower costs to both developed and emerging markets than its 20th century “vertically integrated” multinational predecessors.

Small companies in China, India, Brazil and Mexico have become global players by organizing in clusters where each individual company provides segments of the products and services required by customers in developed and emerging markets.

Business process engineering must refocus on designing and engineering multi-organization process and new management models to coordinate design, development, production, pricing and distribution among multiple companies in the value chain.

Figure 10: Cross-organizational value-chain flowchart

New frontiers for the theory and practice of performance improvement



Designing and engineering a cross-organizational value chain helps individual companies to coordinate strategy and execution for shared clients in global markets.

Multi-organizational performance indicators and strategic models are required to help business networks and clusters in designing and executing shared strategies that deliver superior value to multiple markets and clients.

The challenges of coordinating multiple organizations serving shared clients with knowledge-intensive, “intangible” products and services such as financial derivatives or global design and manufacturing have been dramatically highlighted by the Wall Street 2008 financial meltdown and Boeing and Airbus³³ costly new products delivery, respectively..

Sensible innovation from emerging markets

Less than ten years into the 21st Century, the dominance of the large industrial corporations is on a steady decline. The OECD-centric old economic order is being replaced by a multi-polar, global economy where accelerated growth comes from

³³ Boeing 787 –designed and manufactured by 35 companies in 23 countries- and Airbus 380 –designed and produced by a similar number of companies in EU, US and Asia.

knowledge-intensive, smart and nimble new companies expanding into –and from– emerging markets.

Those companies mired by their own past success in 20th century business models – such as Detroit’s *mass production*, Madison avenue’s *mass marketing*, IBM’s *proprietary technology* and Wall Street’s *short-term quarterly profit*³⁴– will continue to pay a hefty price in declining revenue and market share for their rigid adherence to obsolete business and performance models³⁵.

During the last 15 years, the flow of innovation and patents has been changing steadily from OCDE-centric to emerging and BOP-centric.

C.K. Prahalad (Prahalad & Hammond, 2002) (Prahalad C. K., 2005) research on BOP markets and H.L Sirkin et al. (Sirkin, Hemerling, & Bhattacharya, 2008) study on “globality” opened new and seminal ground in the business and organizational performance field.

Emerging markets provide new scenarios and conditions that stimulate innovation based on simplicity, lower cost and a division of labor among companies located in different countries focused on exploiting comparative and competitive advantages of each country and company.

Brazil’s *Embraer* became the third commercial aircraft manufacturer in the world thanks to its innovative and sensible design for under 120-seats jets that are sales leaders in emerging and developed markets.

India’s *Aravind* has dramatically reduced the costs of eye surgery by changing the division of labor and processes in its clinics, focusing its world-class eye surgeons work exclusively in surgery and transferring their other chores to less expensive medical staff.

China’s *Good baby* created dual-use baby carriages that can operate as carts or car seats to serve the needs of Chinese families with tight budgets. The products were a great success in US and EU markets as well, helping Good baby to become an international player serving 400 million consumers globally.

The dramatic inability of US Big Three automakers to introduce their more fuel-efficient cars designed and manufactured for EU markets in time to keep them competitive during 2007 oil price and 2008 financial crises underscores the urgency for developing new models for strategic performance planning and engineering.

From performance “geriatrics” to performance “pediatrics”: creating new organizations

³⁴ The financial crises of 2000, 2001, 2007 and the final great bank and credit crisis started in 2008 reflect the effect of traditional short-term profit focus that drives financial organizations to unsound lending practices creating speculative “bubbles” and self-destructive market crashes.

³⁵ All Big Three Detroit automakers are currently facing bankruptcy because of the costs of their legacy structure –dating to the 1960s– and their attachment to fuel-inefficient large vehicles in spite of the continuous rising of oil prices during the last 8 years.

While most of the 20th century business and performance research and literature focuses on improving the performance of large organizations with aging business models –what Rosabeth Moss Kanter aptly baptized “teaching giants to dance” (Moss Kanter, 1990) - through process reengineering, mergers and acquisitions, downsizing and turnarounds, 70 percent of the 21st century jobs are created by under-500 employees, less-than 5 year old small new ventures whose products and services didn’t exist a decade ago. (Bernardez, 2007) (Barreto & Wagman, 2007) (Bernardez, 2008)

Performance “improving” attempts to “fine tune” obsolete performance systems –such as command and control, Harvard’s MBA and process improvement- can at best delay an organization’s business decadence. Costly conventional bouts of M&As, restructuring and reengineering often produce what C.K. Prahalad aptly called “*organizational anorexia*” (Prahalad & Hamel, Competing for the future, 1994): a lighter but emasculated organization, struggling to keep afloat a declining business model.

Performance improvement must move from providing “geriatric” help to bringing about new companies and reducing their failure rate by providing new models and frameworks to create rather than simply “improve” performance for the future. (Bernardez, Valdez, Santana, & Uribe, 2007)

Summary

Therefore, this article is an invitation to look farther and deeper into organizational and social performance and value creation, a call to integrate different schools of thought and integrate them in order to address the challenges ahead.

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