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The Costs of Scarcity and the Opportunity of Abundance

by

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ABSTRACT

Abundance – more than you can use – provides ample direct benefits to any organization. This abundance already exists in the potential and development of your strategic resources, in the unfulfilled possibilities in your organizational structures and processes, and in your stakeholders' perceived value of the relationship with you.

Abundance is a desired state for any organization. While this seems obvious, direct measurement of this abundance is not. Without measurement, a company cannot assess the benefit-cost of investing in abundance-based practices. The quality movement shows us the way. The measurement of the cost of no-quality provides a minimal estimate of the benefit of quality. Similarly, this paper proposes a framework for the costs of no-abundance or the costs of scarcity. The framework is then applied to four cases, making direct measurement of the benefit of abundance obvious.

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CLAIM

We contend that most organizations are losing the benefits of the capabilities for which they pay dearly and exercise daily. When one understands that these losses arise from a measurable scarcity state that produces scarcity practices, one can begin to substantively reduce these "costs of scarcity." We demonstrate to the reader from case studies herein that working out of a conscious "abundance dynamic" – versus a less conscious "scarcity dynamic" – enables one to make sustainable, striking gains in the conduct of day-to-day and long-term business.

What if you could increase the quantity and quality of resources in your organization, their efficiency, effectiveness, and innovativeness by 100% at no cost? The fact is that most organizations are missing at least 75% of the benefits of the capacities they have already paid for, as a result of, costs of waste, poor quality, excessive inventory, turnover of high-performance employees, stress, and the failure to meet customer needs. These same organizations may also be missing up to 90% of the benefits of the potential within their reach, such as seeing new opportunities, attracting top performers, increasing the percentage of the highest margin products and services in their niche, the potential contributions every employee brings every day, and stakeholder loyalty.

Our calculation of potential lost benefits is further supported from the large volume of research in lean manufacturing. This research shows that only 5-35% of work adds value, with 65-95% of work being one or more of the "seven deadly wastes:" overproduction, waiting time, over processing, defects and rework, excessive motion, inventory, and transportation. The "costs of scarcity" framework highlights many of the systemic root causes of the seven deadly wastes, indicating they are a conservative estimate of the costs of scarcity.

Abundance is a dynamic state, accessed through your organization's capacity to generate and sustain a flow of more than it needs, more than it can use, and to spin-off the surplus to the benefit of itself, its stakeholders, and its larger system. Abundance is an inner and outer state in which one exercises specific capacities to produce and sustain the resources one needs to realize an individual or collective purpose. Outwardly, abundance produces material and financial resources, sufficient manpower, necessary skills and competencies, etc. Inwardly, it generates and sustains initiative, creativity, leadership, intellectual know-how, confidence, and clear understanding of future barriers and possibilities. Inner and outer abundance capacities are mutually reinforcing. The riches one creates enhance one's confidence and capacity to generate further riches. The dynamic of abundance acts as a self-perpetuating virtuous feedback loop, raising all players in its system.

The capacity to be in abundance provides obvious, ample and direct benefits. The capacity for this abundance already exists in your organization in:

- the potential and development of your strategic resources, both tangible and intangible
- new and more effective possibilities in your organizational structures and processes
- your stakeholders' perception of the value of their relationship with you.

Abundance is a desirable state for any organization. While this seems obvious, direct measurement of this abundance is not. If you can measure your capacity for abundance, your company can assess the benefit-cost of investing in abundance-based practices.

Most organizations live in and compensate heavily for scarcity. Some organizations are figuring out how to live in abundance and benefit from the extraordinary outcomes it produces. We will show you how to measure the benefit of abundance, providing a benefit-cost investment framework, as well as where to invest in abundance. Four case studies illustrate the framework.

SCARCITY - ABUNDANCE FRAMEWORK

Measuring the benefits of and capacity for abundance gets its inspiration from the quality movement. Initially nobody knew how to assess the benefits of quality programs; this made investment decisions difficult. The innovation was to assess the cost of "no-quality." The insight was that the benefit of quality had to be at least as big as the cost of no quality.[1] Likewise, the benefits of abundance must be at least as big as the costs of scarcity, which is straightforward to measure. Two major domains must be defined to measure scarcity and abundance opportunities. One is based on the building blocks of any economic system, the other on how one perceives and works with each building block within that system.

Three building blocks

A comprehensive "costs of scarcity" framework includes the three building blocks of all economic systems: resources, organization, and value. As shown in Figure 1, typically resources are seen as the inputs to the production process, which people organize their work together to produce into a product or service that someone else values. Theories about resources, organization, and value and their application have evolved over hundreds of years.[2] For our purposes here, we will simplify these three huge areas of study.

Basically, resources are the substances that support human existence. These resources are tangible, such as people, buildings, equipment, material, and land, or intangible, such as reputation, competencies, loyalty, know how, and intellectual property. Resource theory looks at what resources are, the dynamics of their accumulation, and how human agreements influence the interactions of different resources.

Organization is how people interact to achieve their goals. Organization theory looks at why people come together, at the kinds of agreements they make to optimize human interactions, and at the structures and processes that support those agreements.

Value is the measure of the pleasure produced by, or the need that is satisfied by, an agreement between two or more parties. Value theory defines what value is, how people generate and exchange it, and who gets what part of the value generated. To build a "costs of scarcity" framework, we also need to understand the three levels of perceived reality people associate with these three building blocks.

[1] Classic texts that brought the cost of no-quality include (Crosby, 1979; Feigenbaum, 1956). For a recent review of the "cost of quality" literature and practice, see (Schiffauerova & Thomson, 2006).

[2] For a multi-century history of economic theories of resources, organization, and value, see (Roncaglia, 2006).

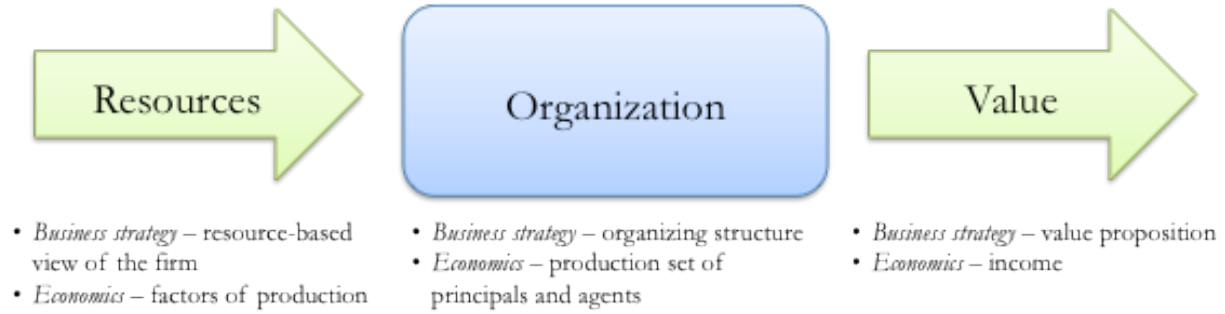

Figure 1: Three Main Building Blocks

Three levels of perceived reality

The ability to see more than may appear to be present is based on one's facility to develop grounded perceptions, through structured inquiry and dialogue, with colleagues at three different levels of reality. While some leaders intuitively use this ability, we suggest that many more leaders can develop the capacity to ask and pursue basic questions that each "reality level" poses relative to resources, organization and value.

Our research finds that people experience resources, organization, and value at three levels of perceived reality: *things*; *development*; and *possibility* (see Figure 2).

At the *things* level, people ask, "What do we have at this moment in time?" Right now we have a specific level of resources, organizational capacities, and a defined value for what we provide to different stakeholders. At the *things* level, people can make choices about how to use the resources they have available right now. With regard to organization and value, at the *things* level, people may ask, "What is our group's competitiveness in the exchange of value with someone else?" The *things* level focuses on the reality of the present – what is available right now.

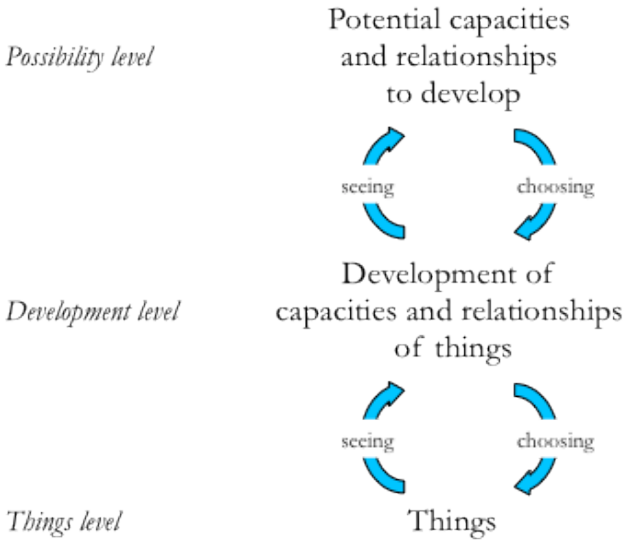

Figure 2: Possibility, Development, and Things Levels of Experience

At the *development* level, people look back and forth in time, from past to present to future, asking, "What are our processes for building up resources, for developing specific organizational capacities,

for having our stakeholders experience value?" This level looks at the inflows and outflows of tangible and intangible resources that influence the amount of a specific resource accumulated over time. At the *development* level of awareness, one might ask, "How can we build relational capacities, across our networks, to develop the structures and processes that support the firm's movement in that direction?" And, one might ask, "What value do our stakeholders perceive from their developing relationship with the organization?"

At the *possibility* level, leaders form an intuition of the future based on a deep understanding and study of operational reality. At this level, one might ask, "What can we see in the potential opportunities for new and different resources? What can we see in the potential in individuals and groups, and how they interact?"

Possibility looks at the potential of how to organize peoples' work together, collaborating around the bigger possibilities available to the group. For the value of innovation, leadership might ask, "Where could we be on the leading edge, if we invited our peoples' best contributions?"

All three levels of reality are real, and they co-exist – leaders have a current set of things, they develop those capacities over time, and they see into the possibilities of the future. Not all leaders work with these three levels of reality in a conscious and collaborative dialogue. When leaders are not conscious of these levels, the organization's leaders and people are under-nourished, under-appreciated, under-developed, and under-utilized. Operating results suffer when one lacks capacity to work at each of the levels and to see the ties among them.

We suggest failure to consciously work at the three levels is the systemic root cause of the scarcity described as the seven deadly wastes in lean manufacturing and also as issues related to enterprise growth and development. When one works consciously with these three levels, the organization flourishes and moves into higher states of abundance, as we show in the examples below.

Costs of scarcity

People describe the experience of seeing into possibility as one of abundance – there is no limit to the possibilities available. Making choices out of abundance allows for greater possibility that one is able to see, develop, and make available at any given moment. Conversely, not making those choices deprives the organization of the available abundance, resulting in scarcity. There is a "cost of scarcity" at the intersection of the *possibility*, *development*, and *things* levels of resources, organization, and value, depicted here as a "costs of scarcity" matrix (Figure 3).

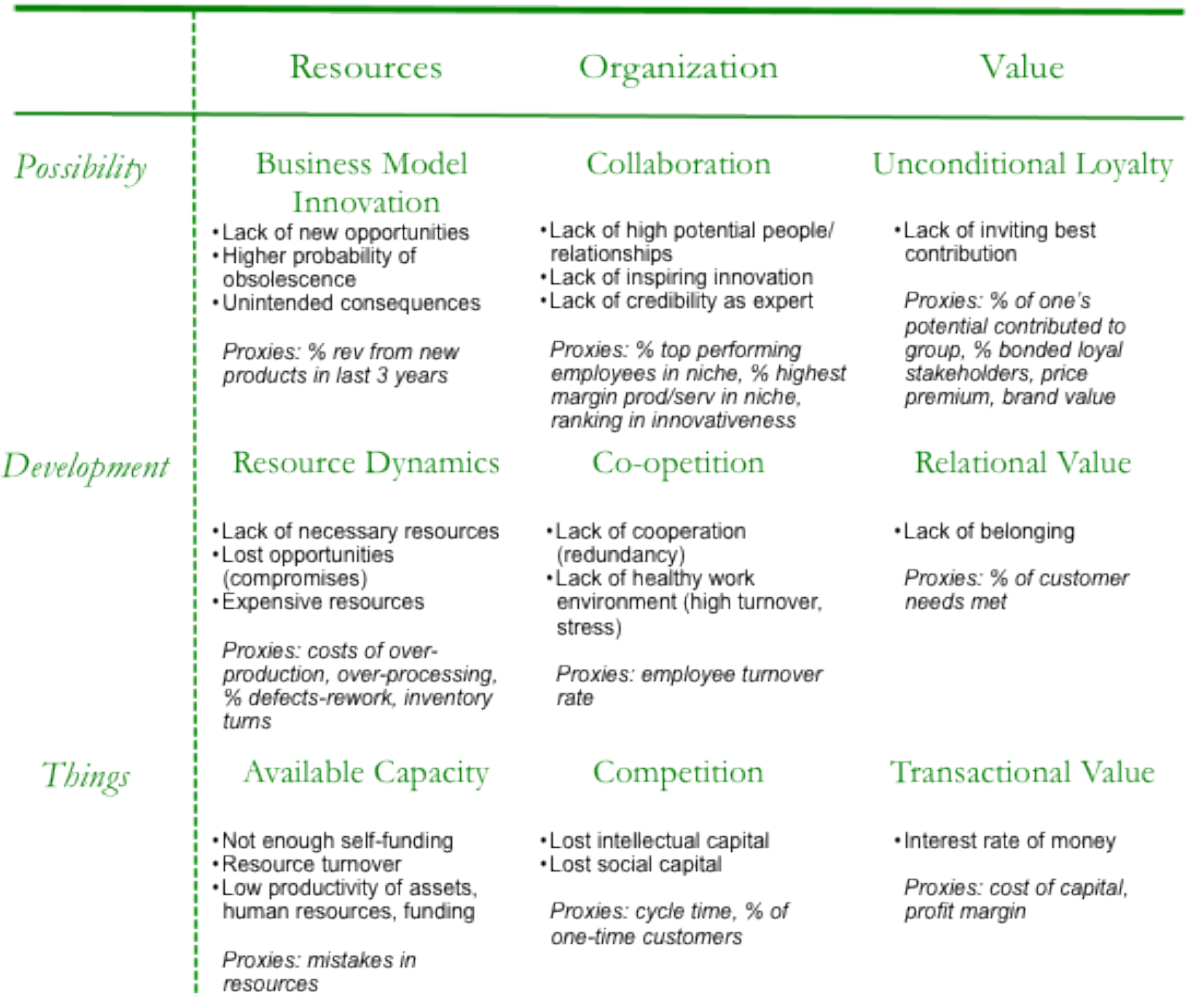

Figure 3: Costs of Scarcity

Business Model Innovation

Starting at the top, with the *possibility* level for resources, people ask, "What are the potential acts of creation available to us?" By not availing oneself, continuously, of the acts of creation, one invokes the cost of scarcity: lacking the imagination of new possibilities; missing opportunities; incurring a higher probability of obsolescence; and not foreseeing strategic consequences. While you can think of many proxies for this scarcity, one is sufficient to demonstrate the high cost of scarcity at the *possibility* level of resources:

- the probability of not being in the game.

A simple, readily available proxy is the industry standard for the percentage of revenues from products/services introduced in the last three years. Ranging, at an industry level, from 10% for food and beverages to 30-35% for apparel, electronics, and other consumer products, this measure shows roughly that an apparel or electronics product lasts at most ten years. If the development and testing of new products takes years, missing new opportunities increases the risk of obsolescence, by a great deal.

This risk has the immediate effect of discounting the future value of cash flow, decreasing the firm's time-discounted market value – the net present value of its future cash flow. For instance, a firm

caught unaware of new opportunities in apparel three years out, increases its probability of obsolescence by at least 10%, decreasing by at least as much the future revenues and cash flow that contribute to its market valuation.

Collaboration

For organization, at the *possibility* level, abundance comes from imagining, "How might people come together, for the group, truly collaborating in creative synergy?" The lack of that abundance drives the inability to see great synergies for the group, to have inspiring relationships, and to attract the most innovative talent. Three proxies for these costs of scarcity focus on the top performers in an organization's niche:

- the percentage of top people in that niche that work with the organization
- the percentage of the highest margin products/services in the niche
- the ranking in innovativeness in the niche

For example, a leading consulting services company focuses little effort at this level of organization, attracting very few of the most innovative consultants in the field, making it very difficult to attract the higher margin paying clients, and making them a follower rather than innovation leader in the field. While they remain financially successful, they have to work much harder for it than those groups that benefit from abundance at this level.

Unconditional Loyalty

For value, at the *possibility* level, abundance shows up in the experience stakeholders have when they engage with the company. At this level, leaders ask "What is our value proposition for customers?" and, "How can we invite the best contribution from our employees?" One of the authors has asked thousands of people in hundreds of organizations about the percentage of their own potential that they contribute to their organization. Rarely is the answer given above 15-20%. This is potential that the organization has access to because they have the relationship with the person, whether as an employee, supplier, or consumer. Two proxies for the value-possibility costs of scarcity are:

- the percentage of one's potential contributed to the organization
- the percentage of stakeholders that are truly loyal to the organization.

If they are not truly loyal, these stakeholders might easily migrate to an organization where they experience receptivity to a greater contribution of their potential. In an industry such as food and beverages, where 15-20% of the customers drive 80% of total revenues, losing 10% of these customers would have a drastic impact on future profitability.

Resource Dynamics

At the *development* level, for resources, leaders ask, "What resources do we need now and in the future? What upcoming opportunities do we need to prepare for? What is the optimal way to access the resources we will need?" Without this awareness, however, the organization will lack the resources necessary for the future, lose opportunities, and overspend on resources acquired at the last minute. Proxies for these costs of scarcity abound, including four of the seven deadly wastes in lean manufacturing:

- the costs of over-production, over-processing, defects and rework, and excessive inventory

These four costs alone can easily represent 35-50% of an organization's total costs.

Co-opetition

At the *development* level, for organization, leadership asks, "What individual, relational, and group capacities should we develop to enable greater cooperation and a healthy work environment?" The lack of cooperation leads to redundancy, siloed behavior, and friction. An unhealthy work environment leads to turnover. Two proxies for the lack of individual development is:

- the rate of employee turnover, especially of the employees that meet or exceed performance expectations
- speed of decision making

Relational Value

For value, at the *development* level, leadership asks, "What acts of creativity do we need to appreciate and acknowledge? What do our stakeholders perceive as the value of the journey they are taking with us?" Without this awareness, organizations find a lack of appreciation of and enjoyment in the process, leading to a lack of human relationship connections, which is a direct driver of turnover. This is turnover of all stakeholders. A proxy for this cost of scarcity is:

- "failing to meet customer needs"

The cost of customer and employee turnover is very high for most organizations, as it is much more expensive to acquire and develop a new customer or employee than to retain one.

Available Capacity

At the *things* level of resources, leadership asks, "Do we have enough of the factors of production (land, labor, and capital)?" In scarcity, the organization lacks the resources to self-support its own growth and finds a high, destabilizing turnover of resources. Proxies for this cost of scarcity include:

- the percentage of stockouts, backorders, expediting, dropped calls, and cycle time.

Not having enough land, labor, or capital on hand leads to the inability to deliver promised products and services, which as a minimum is foregone revenue and lost relationship.

Competition

At the *things* level of organization, leaders ask, "What knowledge and relationships are available to us, at this moment?" Scarcity at this level leads to a lack of intellectual capital in what people know and a lack of social capital in who they know. Two relevant proxies from the deadly wastes include:

- excessive motion and waiting time

Both result from a lack of cooperation and the lack of people with sufficient knowledge or relationships to address the issue at hand.

Transactional Value

In value at the *things* level, leaders ask, "What is the fair value for exchanges we make with each stakeholder?" Scarcity at the *things* level results in insufficient value in the exchange. Because there is not enough resource, relationship, knowledge, or value offered, the value tendered is lower. Two proxies for this cost of scarcity is:

- "failing to meet contractual commitments"
- the percentage of one-time customers

QUALITATIVE ASSESSMENT

To assess an organization's "costs of scarcity," a qualitative assessment provides quick insights about the potential benefits of abundance, and a quantitative assessment dives deeper into the dynamics generating the costs and the actual financial impact. These assessments point at the systemic root causes of scarcity and the seven deadly wastes. We start with the qualitative assessment, applying it to three case studies, highlighting with "implications heat maps" where a group is stronger or weaker in each of the nine costs of scarcity. The implications heat map simply indicates the index of energy applied ("heat") to policies, structures, and processes in a given area.

Firms of endearment

A 2007 study, described in the book *Firms of Endearment*, selected 30 "great" companies, defined as "one that makes the world a better place because it exists, not simply a company that outperforms the market by a certain percentage over a certain period of time." These firms include: Amazon, Best Buy, BMW, Costco, Google, Harley-Davidson, Patagonia, Starbucks, UPS, Whole Foods, and twenty other companies. Success criteria for the great companies focus on multiple stakeholders, including employees, customers, investors, partners, and society. We placed these criteria onto the implications heat map in Figure 4, covering the area between the *development* and *things* levels, across resources, organization, and value.[3] For example, the focus on developing relationships with stakeholders related to the products and services is a *development* level success criterion. This suggests that firms of endearment find more sustainable success by being healthy at both the *things* and lower *development* levels. We do not know if the firms studied only work at the *things* and *development* levels, or whether this is all that the authors found. Nonetheless, how does a *development* and *thing* level focus perform? The study finds that the public firms of endearment returned 1,184 percent for investors from 1996 to 2006, compared to 122 percent for the S&P 500.[4] These are amazing financial outcomes.

[3] The descriptions in Figure 4 are directly from the book *Firms of Endearment* (Sisodia, Wolfe, & Seth, 2007, p. 21), as are complete descriptions of the companies selected. For data from the study, see (Sisodia, et al., 2007, p. 17).
[4] These data from the authors' study are provided in (Sisodia, et al., 2007, p. 17).

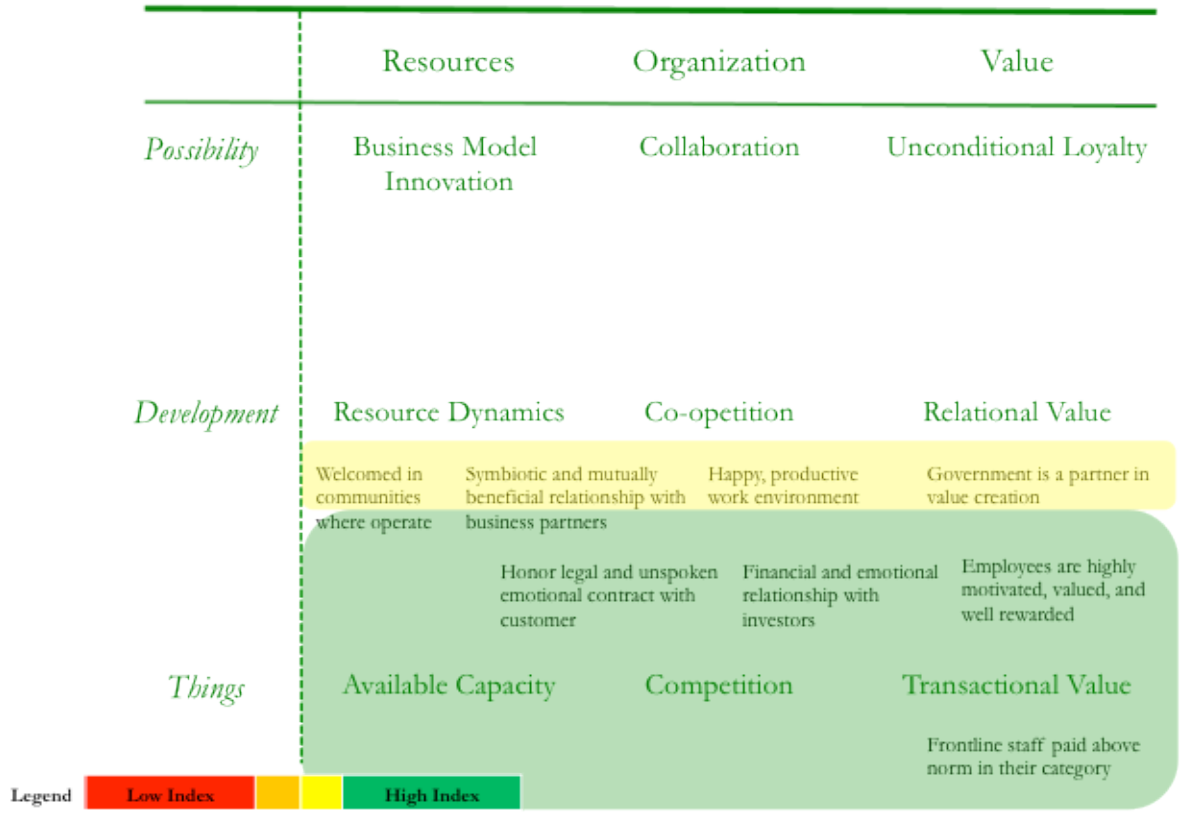

Figure 4: Implications Heat Map for "Firms of Endearment"

If these firms work only at the *things* level most of the time and at the *development* level some of the time, then the "costs of scarcity" framework suggests some proxies for the benefits they would gain by investing in abundance at the *possibility* level. These include increasing access to innovative opportunities that provide a higher margin, attracting and retaining the highest performing employees who contribute more of their potential, and winning greater loyalty from their stakeholders.

Petco

The second largest pet supply company in the USA had $2.7B in revenue in 2007 with 10,000 full-time equivalent employees in 934 stores in the USA. Petco is listed by Forbes as #158 in the largest private companies in the USA. Success, at the store level, is strongly focused on financial performance and store efficiency (see Figure 5). Store managers are given substantial autonomy to develop community programs, promoting the love of animals. At the store level, Petco's practices focus primarily at the *things*-to-early-*development* levels. This is a picture of a successful, large, privately-held business. The focus is on clear performance standards, managerial autonomy for how the store engages the customer, support of pet adoption, community engagement and employees who deeply embrace the love for animals.

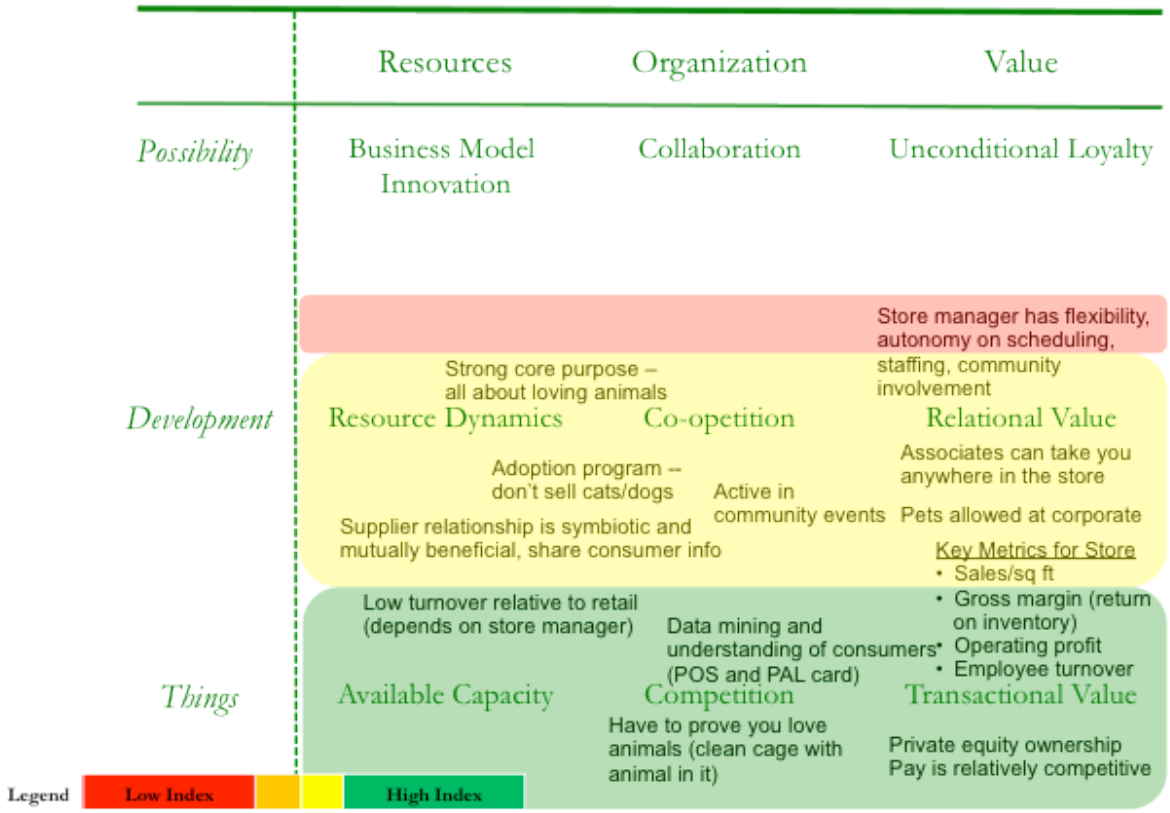

Figure 5: Implications Heat Map for Petco

This suggests significant benefits to Petco from investing in abundance at the *possibility* level. This includes increasing its ability to attract and retain top talent, achieving higher levels of resource efficiency, while decreasing the risk of becoming obsolete, increasing the value of the brand and its ability to charge a price premium.

Global professional services organization

We applied the same framework to a large professional services organization, with employees in every country across the globe, and global revenues in the billions. Starting with its resources, at the *things* level, the organization has a large capacity in its human resources, hiring from top schools across the world. At the *development* level, it invests in the development and mentoring of its people. In its organizational structures and processes, it focuses on cooperation within and across project areas, at the *development* level, sharing best practices and lessons learned. There are a few pockets of deeper collaboration at the *possibility* level, where people come together to create something new, usually going above-and-beyond the call of duty. This usually requires a specific and rather rare chemistry among the professionals. The experience of value recognizes contributions to client outcomes and development of the organization's abilities, at the *development* level, with a very strong focus on meeting pay-for-performance expectations, at the *things* level. As seen in Figure 6, the organization is very successful at the *things* and *development* levels, with pockets of development at the *possibility* level.

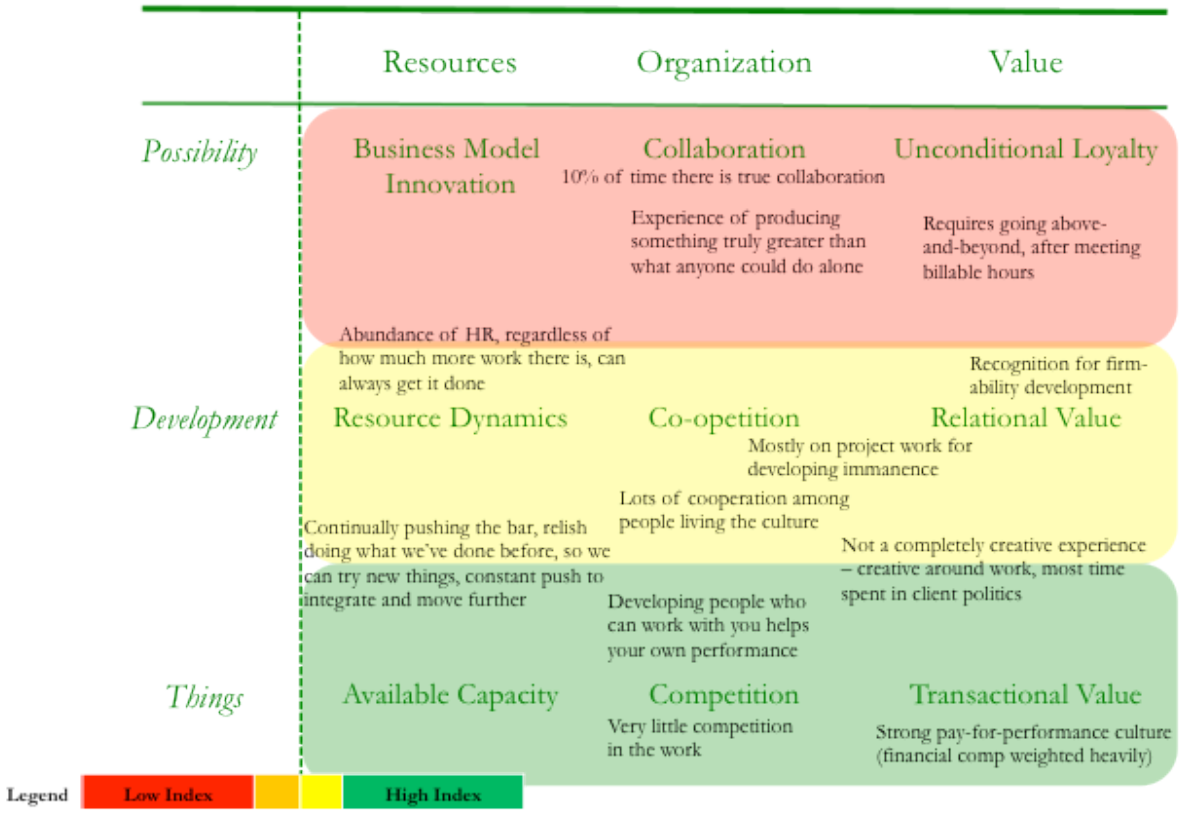

Figure 6: Implications Heat Map for Global Professional Services Organization

This reflects how the organization tends to manage its resources, organization, and value, focusing predominantly on the *things* and *development* levels. With only occasional pockets of work at the *possibility* level, it must be experiencing the costs of scarcity at the *possibility* and higher *development* levels in Figure 3. The costs of scarcity at the *possibility* level include the cost of not inviting the best contribution of its people, rather focusing on having people do what the firm needs. This leads to the costs of high turnover and the inability to attract and retain the most creative people. These are the people who create a perception of eminence in the field, that clients pay a premium to access. Firms that do attract these people and receive this premium are able to price their services at a much higher rate, paying their people the same, allowing them to be very profitable at lower utilization. In the remaining time they are able to focus on innovation and self development. In contrast, this organization requires higher utilization with less remaining time for innovation and self development. The resulting lack of expert credibility also makes it more difficult for the firm to sell its services, requiring more resources to be focused on sales, whereas clients line up for the *possibility*-level professionals. Not being on the leading front, at the *possibility* level, decreases the ability to take advantage of new opportunities, and increases the risk of becoming obsolete. The organization must invest heavily at the *development* and *things* levels to compensate for this scarcity, a cost that firms who are strong at the *possibility* level do not have.

This costs of scarcity assessment shows that the organization's success comes from its strength at acquiring strong *things*, and nurturing them at the *development* level. Investment at the *possibility* level could lead to even greater innovation – decreasing its fight against the risk of obsolescence, attraction and retention of the best performers, credibility, and client premiums. Direct proxies for

these costs might be decreased turnover and selling costs, improved pricing, and ability to hire the top performers.

QUANTITATIVE ASSESSMENT

To the qualitative assessment shown in these three case studies, one can add a quantitative assessment of the costs of scarcity, examining the dynamics generating the costs and their financial impacts. We apply this quantitative assessment to THORLO, a small textile company in North Carolina (USA) dedicated to the preventive foot health of its millions of consumers. THORLO's high-tech socks are sold in 37 countries around the world. THORLO is exceptional not only for its unique hosiery products, designed to provide preventive foot care, but also for its innovative corporate culture. From its founding in 1953, the company has expanded its original offer of outstanding craftsmanship and high quality, in an industry more typically focused on economies of scale, to include a focus on exceptional responsiveness to the consumer's real needs. From the start, THORLO's leadership has understood that its success in delivering value depends on the commitment of all of its employees. To that end, THORLO has maintained a supportive, collaborative culture even as the business has grown in size and dramatically increased the scope of its product lines.

Mapping their actual practices shows how THORLO operates across the *things*, *development*, and *possibility* levels of the "implications heat map" in Figure 7. This shows highly efficient and effective policies and processes that reflect abundance at the *things* level. We also see healthy expressions of abundance at the *development* level, reflecting clarity around the strategic direction and core values of the company, no political in-fighting and a free flowing conversation across areas about the flows of strategic resources. This figure also shows quite a few strategic processes at the *possibility* level, explicitly exploring the potential in the short and long term throughout the organization through true collaboration at all levels of the organization, truly loyal customers and employees, and a high percentage of employees' own potential contributed to the organization. All of this is interwoven very clearly in a process-structure that THORLO calls the integrated collaborative conversation (ICC), working the continuous transition from *possibility* to *development* to *things* to *development* to *possibility*.

This picture provides a deeper story of how THORLO has been able to sustain its seemingly extraordinary outcomes. It is how they come together as a company, and the agreements they make, that allows this completely different, unexpected outcome. These agreements are possible because of the way the company perceives the world, its fundamental assumptions, its knowing about abundance.

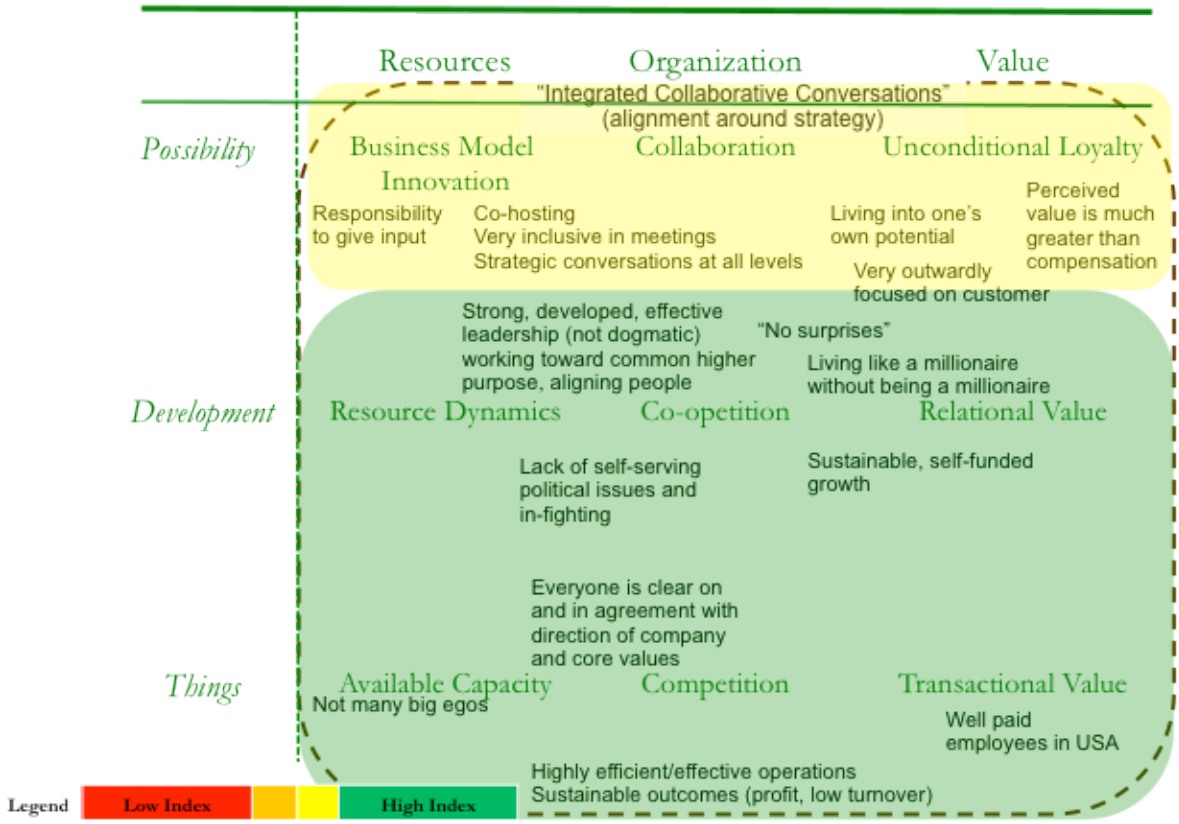

Figure 7: Implications Heat Map for THORLO

We have a direct assessment of the benefits of the abundance in THORLO, as there was a clear point in time when the culture shifted. Based on its ability to see abundance at the *possibility* level, THORLO's response in the early days of the global financial crisis was to simultaneously make an operational shift in short-term efficiency and a cultural shift in long-term sustainability. This cultural shift occurred through an agreement, across the company, of 100% personal responsibility. This meant that everyone committed to the practice of realizing that everything they perceived in their environment was only a reflection of their own behavior, and that the way to bring about a better outcome was to begin with the personal question, "What behavior do I need to change in me that would disallow or dissuade that unfavorable outcome in my environment from occurring and in its place would invite the desired outcome?"

We highlight the benefits of these shifts in manufacturing and in finance. Figure 8 describes the manufacturing dynamics up to 2007, before the cultural shift. Basically, there were three balancing feedback processes that stabilized THORLO's ability to meet its on-time delivery commitments. These loops were in the areas of quality control, equipment maintenance, and inventory. THORLO maintained a low defect rate with an army of quality control auditors. In order to maintain quality, process adjustments and preventive maintenance were performed, which led to manufacturing downtime, reducing labor productivity. Finally, inventory levels were kept high to maintain a high on-time shipment rate. Issues with these balancing loops were exacerbated by ineffective workforce planning, which reduced the ability to flex with demand, hence reducing labor productivity, and ineffective sales and operations processes, which had multiple "hedges" by the functional participants, resulting in low demand planning accuracy and higher inventory safety stock.

Pre Cultural Shift

Three "balancing loops" profitably stabilize delivery and demand.

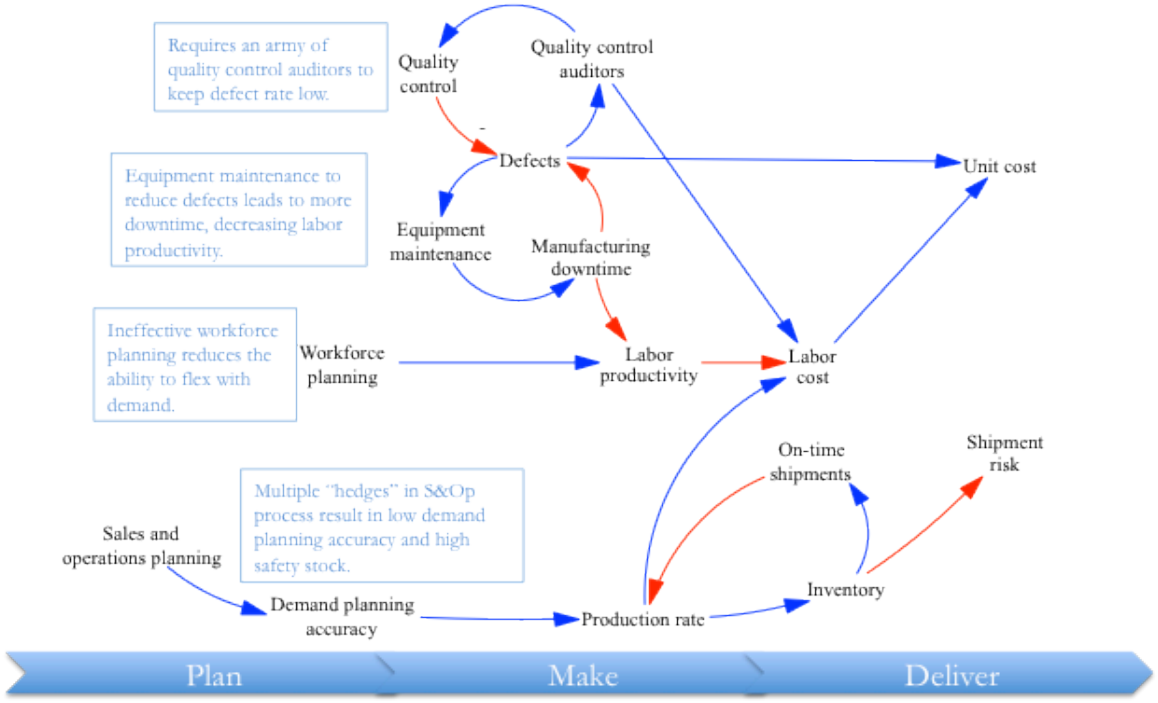

Figure 8: Dynamics Before Cultural Shift

In 2007 the company needed to adjust its costs to its existing level of demand and free up cash through reducing working capital. It achieved the required cost adjustments through reduced staffing and reduced inventory, as shown in Figure 9. THORLO made some significant changes in its culture, mainly through the agreement of "100% personal responsibility," which drove two strong changes in behavior, the experience of ownership and responsibility by all employees and integration across the business. Through 100% personal responsibility, THORLO was able to maintain product quality with fewer quality auditors. In addition, this drove a shift from preventive maintenance to having the best people build quality in at the source.

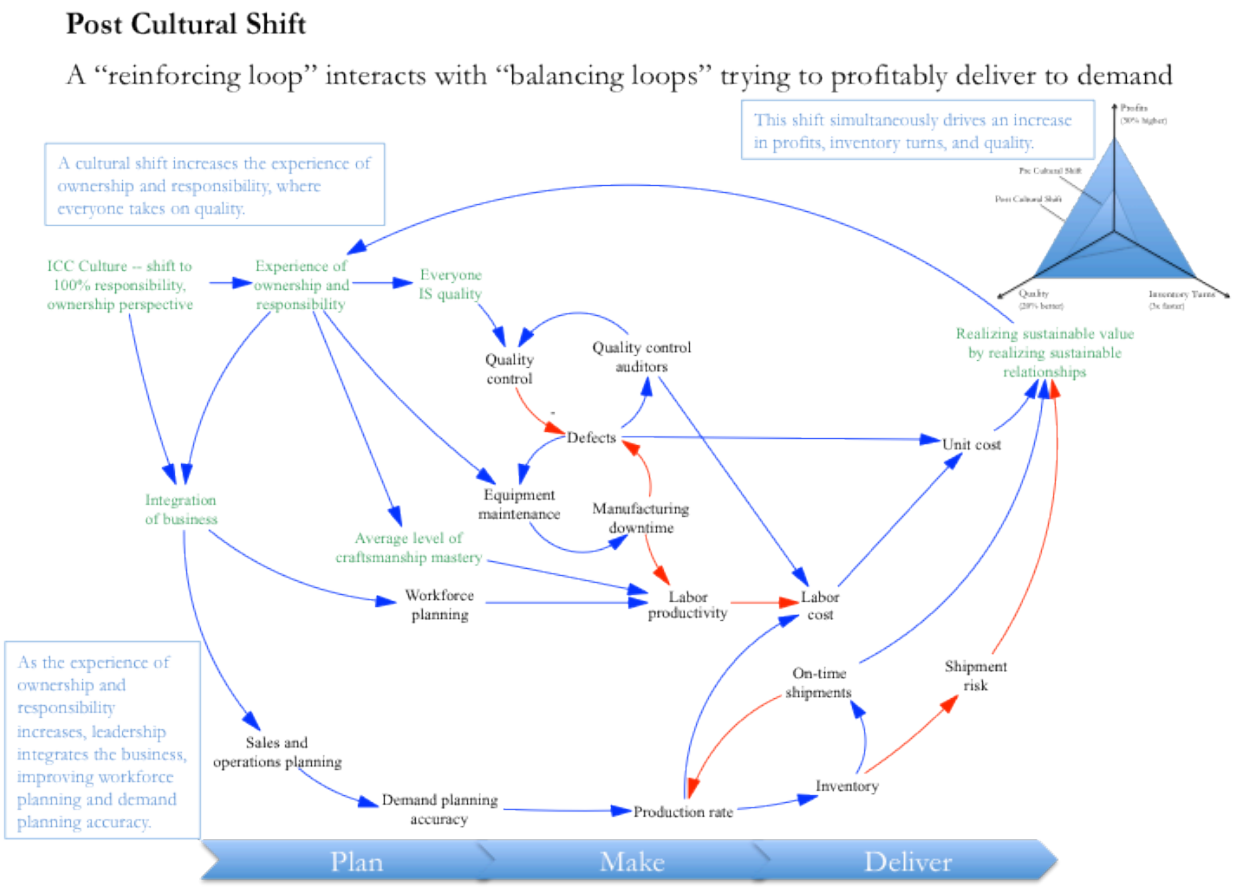

Figure 9: Dynamics After Cultural Shift

Through integration of the business, THORLO was able to achieve truly collaborative workforce planning, which allowed the workforce to flex with demand across the manufacturing floor, collaboratively among work centers. In addition, collaboration in sales and operations reduced the multiple hedges by the functional participants, improving demand planning accuracy and reducing the need for inventory safety stock.

Through this cultural shift to 100% personal responsibility, THORLO was able to reduce its workforce by 15% and its inventory by 30%, while maintaining quality, production rates, and delivery schedules. Thus, by addressing the deeper root causes of scarcity, THORLO's simultaneous cuts and cultural shift resulted in a sustainable net positive benefit.

Linking these shifts to THORLO's heat map (Figure 7), "integration of the business" happened at the *possibility* and the high-*development* levels where collaboration enabled much greater inclusion of perspectives across functions and processes, and strategic conversation integrated the three levels of *possibility*, *development*, and *things*. The cultural shift to "100% personal responsibility" evoked in each the *possibility*-level responsibility for ensuring that everyone involved would give input about the potential opportunities and consequences they saw. They also took on the ownership perspective that the value experienced in *possibility*, *development*, and *things* is far greater than just *things*-level compensation, both for themselves and for their fellow colleagues. These *possibility* and *development*-level shifts brought about abundance in *development* and *things*-level resources as well, achieving higher

production levels with fewer people. This increased the abundance experienced in value by the bonded loyal consumers.

THORLO's 100% personal responsibility culture has allowed it to continue to make productivity gains on top of the step function improvement described above. The company has achieved these outcomes while retaining all production in the US at its North Carolina mill. In fact, THORLO is one of the few remaining hosiery companies still manufacturing completely in the US.

COMING FULL CIRCLE

The "costs of scarcity" framework takes a deeper look at the root causes of scarcity and the seven deadly wastes in lean manufacturing. While most root cause analysis stays at the *things* or *development* levels, such as addressing downtime through preventive maintenance, this framework expanded the analysis to the *possibility* level, where downtime was addressed through a culture of quality. The framework also shows how leading inquiry into the *things*, *development*, and *possibility* levels of reality can shift scarcity mindsets and reduce the associated deadly wastes.

The THORLO case illustrates how a big shift in outcomes results from a cultural shift in integrating the *possibility* level of resources, organization, and value. This cultural change highlights our characterization of both abundance and scarcity as integrating both inner and outer dimensions of organizational realities. Purely "technical" improvements in outer processes and conditions, no matter how advantageous in themselves, cannot *by themselves* produce the self-perpetuating dynamic of abundance. The leadership challenge is greater than that. A more systemic shift in mindsets, attitudes, and commitments is required, if scarcity is to be transcended and transformed into abundance. As we have seen, at THORLO such a shift was strikingly exemplified by the collective commitment to "100% personal responsibility" and all the impacts that had on capabilities, processes, and practices on the ground.

Finally, the "costs of scarcity" framework showed that the benefits of abundance you see every day are in your strategic resources, your organizational structures and processes, and the value your stakeholders perceive in their relationship with you applied to those three building blocks. You can experience the benefits of this abundance now, by integrating the *things*, *development*, and *possibility* levels into the daily practices of your organization. The possible benefits from this shift are huge. The costs of not investing in and developing these benefits are clear and measureable.

This framework shows one way to identify the benefits of abundance and how to obtain these benefits. We started by acknowledging that each "reality-level" can consciously address and resolve questions of resources, organization, and value at the levels of things, development, and possibility.

Simply acknowledging this is a huge first step. Then, using the "implications heat maps," we asked about the organization's policies, procedures, and culture, mapping them onto the three levels of resources, organization, and value. We then applied the proxies for the costs of scarcity to the areas that were blank or rare in the heat map. This gave us a sense of the costs of scarcity the organization was experiencing, which we reframed as the possible benefits of abundance. This is the benefit from the investment.

When coupled with the costs to engage with the well known cultural and process shifts required to improve each area, we can then make an investment decision – are the benefits of abundance greater than the costs to achieve them? By asking these questions, you too can begin to benefit from greater abundance in inputs, processes, and outcomes.

RESEARCH METHODOLOGY

The "costs of scarcity" framework evolved out of our on-going work at the Institute for Strategic Clarity on ecosynomics, the science of abundance. Data for the three case studies comes from direct interviews with leadership in the organizations, our own experience in working with the organizations, surveys we have taken within the organizations, and annual reports. Our data for the "firms of endearment" case comes from the book of the same name.[5]

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[5] See (Sisodia, et al., 2007).