International Journal of Management, IT & Engineering
Vol. 9 Issue 10, October 2019,
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A

Value Chain Planning:

Assessing Demand Signals in an International Environment

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Abstract. Technology has advanced rapidly to enable automatic corporate value chain planning using programs that are available for purchase. Between 2012 and 2018, however, the percentage of CEOs who said they felt leaders of operating businesses and leaders of IT were aligned (agreed as to the role of IT within an operating business organization) decreased from 65% to 37% according to Capgemini, with only 35% of responding CEOs agreeing with IT leaders on how IT can contribute to corporate productivity, down from 59% in 2012. Executives must step back, ask then answer why this dichotomy persists? This paper will focus on six variables that, together, may explain in part the perception that automated data does not meet expectations in value chain planning. Variables include: an inverse correlation between inclusion of IT experts in corporate value chain forecasting and trusting them (as more IT experts are being consulted, fewer are trusted); an increasing distance between IT capabilities and senior business executives' knowledge thereof (pace of IT change exceeds pace of decision-makers' growing IT knowledge); an increased perception by business leaders that IT does not capture "new disruptors" rapidly enough, so data provided will be aged before it can be used; an increased perception by corporate decision-makers that their competitors are using the same IT forecasting technology, requiring them to be different; various value chain forecasting programs compete with each other, confusing corporate decision-makers over what brand(s) to select; value chain forecasting programs necessarily must change constantly, rendering corporate decision-makers reluctant to make hefty long-term financial commitments to any given brand(s), fearing obsolescence before reasonable return on investment. These variables seem to become more negative as corporations become more international, when national cultures interface with corporate culture.

Index terms: Alignment, Business, Global, IT, Sourcing, Value Chain Planning.

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I. INTRODUCTION.

Rapid advancement of technology has exceeded the comprehension of many current senior corporate decision-makers, at least facially. Accordingly, the "alignment" or the synchronization of information technology (IT) with senior policy corporate decision-making plummeted between 2012 and 2018, evidenced by chief executive officers (CEOs) who responded to surveys by Capgemini. According to these surveys, 65% of responding CEOs felt leaders of IT and business were in alignment and 59% thought CEOs agreed with IT leaders on ways that IT can contribute to corporate productivity in 2012, but these percentages fell to 37% and 35% respectively by 2018 (Zetlin, 2018). Executives plus IT specialists must step back, ask themselves then answer the question: why has this dichotomy expanded so robustly in only six years' time? In 2015, 94% of CEOs surveyed projected that new technologies would rapidly change the way they do business more between 2015 and 2020 than they had done between 2010 and 2015 (Suer, 2015). In fact, 72% of corporate CEOs interviewed by *Fortune* editor corporate CEOs interviewed by Fortune editor Alan Murray ranked the rapid pace of technological innovation to be their company's greatest challenge in the second decade of the 21st century (Murray, 2015). Companies that fail to keep pace with IT innovation may fail to forecast or at least to forecast accurately their supply chain requirements including "just-in-time delivery" needs (Muddassir, 2016).

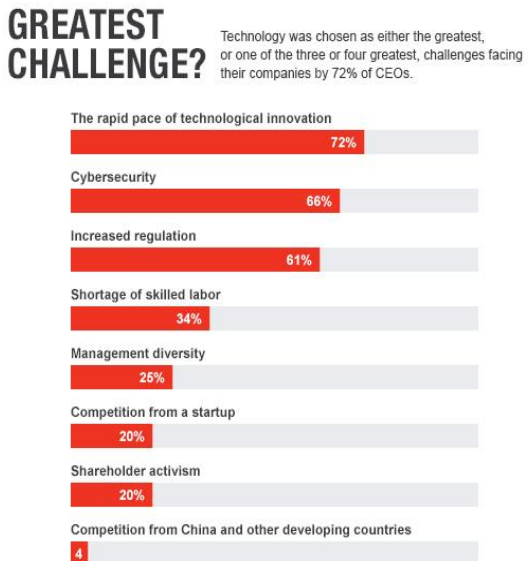
II. AN EXECUTIVE-IT DISCONNECT.

This paper will offer six explanations of the disconnect between senior-level corporate decision-makers and IT specialists, some of which interface.

An inverse correlation exists between the inclusion of more IT experts in corporate value chain forecasting and trusting them.

As more IT experts come to be included in corporate value chain forecasting, senior-level corporate decision-makers trust them less (Zetlin, 2018). Reasons for this are difficult to assess. Several explanations are plausible, however: (a) a generation gap that renders most IT specialists much younger than many senior-level corporate decision-makers, so they do not regard each other as peers; (b) an educational gap that reflects higher educational levels by IT specialists compared to senior-level corporate decision-makers, coupled with a socio-economic gap that reflects moreprestigious universities from which senior-level corporate decision-makers graduated compared to IT specialists, with this partly explaining the vast income differential between the two groups; (c) a lethargy on the part of some senior-level corporate decision-makers that prevents them from desiring to experiment with cutting-edge technology, fearing risk of failure strongly outweighs potential reward as they approach retirement expecting a "golden parachute" that can become derailed on account of an egregious managerial mistake; (d) this mistrust is likely to be compounded in the global environment of transnational and multinational corporations where skepticism abounds already due to unfamiliarity with foreign national cultures or with interface of corporate culture into national cultures.

Figure 1.



SOURCE: A. Murray, "Myth-busting the Fortune 500," *Fortune*. Jun. 2015.

An increasing parallel distance between IT capabilities and senior business executives' knowledge thereof.

Noticeably, the pace of IT change exceeds the pace of senior corporate decision-makers' facially growing IT knowledge. Parallel with the chronological age gap, and more noticeable, there is a technological generation gap that leaves many senior-level corporate decision-makers in retention of skills that were made available to them when they attended graduate school, but ignorant of the technological skills the IT specialists have learned more recently. Such a gap can be narrowed with strategies such as continual managerial education (similar to continual legal and medical education) that publicly-traded companies should consider requiring as a condition

of promoting managers into senior-managerial ranks and, subsequently, upward within higher managerial levels.

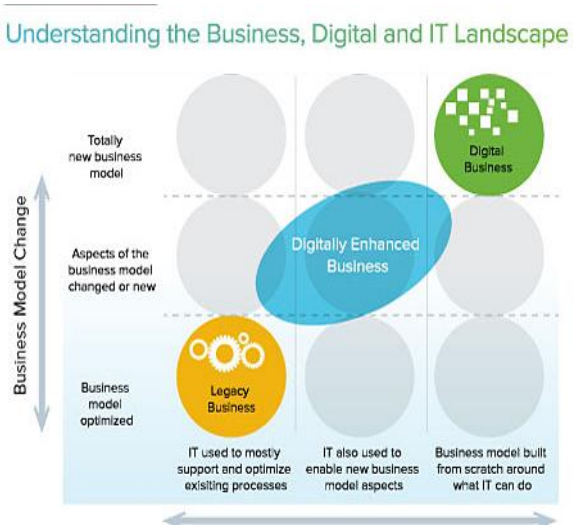
An increased perception by business leaders that IT does not capture "new disruptors" rapidly enough, so data provided will be aged before it can be used.

We know that "garbage in, garbage out" is a watchword of anyone who analyzes data spun out of computer programs. Similarly, value chain planning programs will be likely to capture symmetrical demand signals such as consumer buying trends, less likely to factor in "new disruptors" such as changing demographics, abruptly changing migration patterns or international tensions (Carroll, 2016). Senior-level corporate decision-makers may prefer to figure in these changes subjectively by "hunch" instead of relying on data generated objectively from programs. IT specialists have to communicate better, focusing on business solutions (Suer, 2015). "Disruptors" may be changes in competition, also, as *Fortune* editor Alan Murray noted:

> Sure, 57% of the companies on the 1995 Fortune 500 list aren't there today. But that record isn't dramatically different from the [previous] two decades, when 45% of the companies on the 1955 list were gone by 1975.
>
> Moreover, when we asked CEOs who their "most dangerous competitor" was, 57% said it was another Fortune 500 company. Only 20% cited competition from a startup, and only 4% cited competition from companies in less-developed countries, the purported source of disruption (Murray, 2015).

So paranoia, unjustified fear, seems to play a role in the recalcitrance of corporate leaders to buy into IT forecasting. They continue to do business in the way they have done it historically as "legacy" businesses (Rogow, 2016; Adner & Kapoor, 2016), reflected in Figure 2, almost literally being afraid of their own proverbial shadows, with younger, technologically-proficient IT specialists conveniently fitting into that metaphoric "shadow" of the senior corporate executive. As with paranoia generally, this fear of IT and of the IT executive is unspoken for the most part, with technology-proficient, sometimes "foreign" technology specialists conveniently fitting into the image of a scapegoat in the perception of senior corporate executives. As with paranoia generally, this fear of IT and of the IT executive is unspoken for the most part, left to linger in a murky undercurrent that obscures qualitative or quantitative assessment of plausible explanations for why modern businesses resist using IT in corporate forecasting.

Figure 2.



SOURCE: B. J. Rogow, "The Last Word: Enabling the Digitally Enhanced Business," *Cognizant*. 30 Mar. 2016.

An increased perception by senior corporate decision-makers that their competitors are using the same IT forecasting technology as their company uses, requiring them to be different.

Corporate executives harbor different pretexts for their rejection of IT to complement their personal insight or intuition as to corporate strategy: some inaccurately have come even to believe the "mainframe" to be anachronistic (Tweedale, 2019), while others prefer to shun digital technology because they fear it will overlap technology used by competitors. This does not stop them from purchasing common supplies used by the competition, frequently from the same suppliers. In fact, in some cases digital technology enables one company's competitors to forecast future demand for its own products faster or more accurately than it can do itself, so who's fooling whom?

Part of the fault here rests with corporate chief information officers (CIOs) who need to play a higher and better role, sustainably, in their corporate structure (Suer, 2015). Said differently, CIOs need to bond better and deeper with CEOs, CFOs, corporate decision-makers at other levels so they will be perceived as "insiders" instead of "outsiders", as manufacturers' representatives bond with purchasing managers in order to inaugurate then maintain timeless affinity that becomes so important at six o'clock in a business cycle. It is important for the CIO to explain that *shared* technology is the wave of the future in hardware and software. An example is IBM's "Zowe" that deliberately facilitates knowledge sharing by IT technology that crosses company borders (Vaughan-Nichols, 2018). This is the wave of

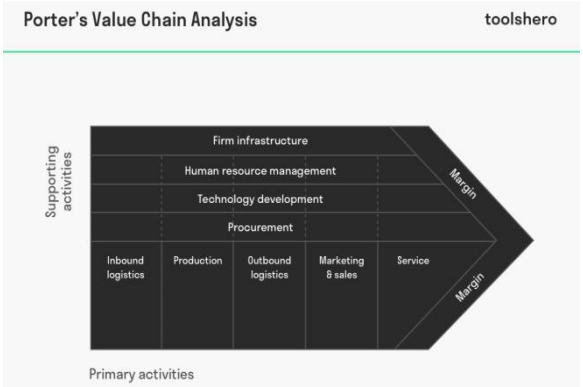
the future, the test being what businesses will manage to adopt new technology together with its *mindset* before the rest do.

Value chain forecasting programs face stiff competition themselves.

At least 20 value chain forecasting programs are marketed presently, many from Oracle ("Next Generation", 2019). Various value chain forecasting programs compete with each other, confusing corporate decision-makers over what brand(s) to select, if one will do or should they hedge with two? To venerable corporate decision-makers, the simplest solution is to select none. This is the wrong option, known widely since Porter published Competitive Advantage (1985). As Figure 3 reflects, supporting activities including technology development and procurement (supply chain management) are required to support primary activities such as inbound and outbound logistics in addition to production, marketing, sales, and service ("Porter's Value Chain Analysis" from Porter (1985).

Surprising to say the least is that even older corporate decision-makers who may not be familiar with recent technological advances seem to have forgotten or ignored Porter's recommendations from 1985, seminal as they are, when most key corporate decision-makers working at the end of the second decade of the 21st century attended university in 1985 or since then, only 34 years back.

Figure 3.



SOURCE:M. E. Porter, *Competitive Advantage: Creating and Sustaining Superior Force*. New York: Free Press, 1985, through V. Van Vliet, "Porter's Value Chain Analysis", *ToolsHero*, 2010. https://www.toolshero.com/management/value-chain-analysis-porter/

III. METHODS AND DISCUSSION

Corporate decision-makers have "rollercoastered" in the 21st century, prevaricating over the systematic uses of IT in value chain planning, welcoming IT in the years leading up to peak welcome in 2012, then retreating from 2012 to 2018 with the percentage of key corporate decision-makers "trusting" forecasting technology dipping almost in half across that six year period (Zetlin, 2018). This pattern evidences decisions made unsystematically and subjectively, reflecting the difference between *effective* managers and *successful* managers. An effective manager considers above everything else what will legitimately benefit the company at which s/he works, whereas a successful manager will make decisions in her/his own best interests, including their security interests. It stands to reason, consequently, that the successful manager will repeat decisions made previously that seem to be working or that have not failed visibly, instead of taking the risk of embarking upon new opportunities, such as those presented by new or revised technologies. Accordingly, the author interviewed 20 key corporate decision-makers in an effort to obtain their anonymous explanations as to why managers increased their uses of and reliance upon technology up to 2912, then decreased uses and reliance upon technology thereafter.

Some preliminary observations seem to be relevant to this research, although the number of respondents interviewed (N) is not sufficiently large to enable meaningful regression analysis, nor is that necessary inasmuch as this is a preliminary inquiry. Corporate decision-makers are typically at least a full generation older than IT specialists, most are white male managers, with educational backgrounds that were sufficiently technical at time of their bachelor and masters studies, but currently insufficient to render them capable of participating in IT analysis at anything more than a basic level of understanding. On the other hand, IT specialists tend to be "Millennials", frequently from South Asia, lack in-depth understanding of the role functional-level managers and higher executive decision-makers play in corporate governance, do not have the same social network access as executives. This "gap" is widening.

An international business environment presents an opportunity to work with people from all cultures and an opportunity to benefit from their diversity. Studies have shown that key corporate executives tend to be mirror images of the national culture from which the company was founded and has prospered historically (Hansen, Ibarra & Peyer, 2016; Gaille, 2013). This is true of the white male managers who have dominated Western corporate leadership, but it is true also of Asian companies that have been dominated almost entirely by Asian male executives. On the contrary, IT specialists are likely to come from environments that are different, more culturally diverse, and they are likely to look or sound as different as their idea variations, much as their preferences in food or entertainment can be expected to be different.

Corporate decision-makers need to include technology in their repertoire of tools relied upon to forecast demand trends in detail accurate and quickly, together with the apparent reasons for trend changes, whether the company is a low cost provider or differentiator, because both cost structure and differentiation options will change with customer wishes, some of those wishes likely to be whimsical, as well as change in relation to competitive response to changing customer preferences. Cost structure may be capable of being increased, for example, or may be required to be decreased, almost overnight. Differentiation provided to customers can become outmoded very rapidly, and differentiation made available by competitors must be replicated directly or indirectly if competitive advantage is to be maintained, hopefully increased. To use a familiar management cliché, corporate decision-makers need to "scope the environment" more systematically than by intuition, internalize the need and benefit of using constantly updated technology in value chain forecast strategies.

IV. IMPLICATIONS FOR ACTION.

Reporting on the *status quo ante* may be interesting, but much more is required to bring about planned value chain forecasting change.

Information technology personnel, beginning with the chief information officer or "CIO" of a company, should proactively commence to change the mindsets of corporate decision-makers. This means that a firm should have a CIO, many do not currently, and that a CIO should be a member of the team of senior corporate decision-makers, accepted by that team, instead of merely being a conduit of information that decision-makers feel free to heed or to disregard at will without justification or consequence.

Senior level corporate decision-makers as well as functional unit directors of IT value chain forecasting. It is a board of directors responsibility to implement this type of training and development. Part of this training and development may require continuous managerial education at major university business schools. Part may be handled internally by drawing upon IT specialists to impart their expertise across corporate decision-making circles. Regardless of the methods used, bridging the gap between IT specialists and corporate decision-makers at all levels is essential. This task is urgent to be undertaken.

Much of the disconnect discussed herein is more than what may be attributed to different age or education cohorts. It is a matter of mutual respect as much as anything else. Senior corporate decision-makers must bond with IT specialists, listen to their viewpoints, commence making team decisions.

CONCLUSION.

As technology improves both accuracy and speed of systematic value chain forecasting, corporate decision-makers seem to have deliberately avoided putting that technology to work, either without reason or for different reasons that seem to be unjustifiable in most instances. At least some stated reasons seem to be compounded as companies operate in a global environment: the trust factor deteriorates, an impetus emerges to cling to traditional habits of decision-making, to minimize risk, to delay or avoid altogether accepting IT experts as real members of the team of senior corporate decision-makers, with a chronic paranoia emerging such that decision-makers resist using modern technology out of fear that competitors will steal their cutting-edge strategies. This practice can "boomerang", because as competitors put to good use the technology a company's senior management refuses perfunctorily even to consider, this gives a competitive advantage to the other side, potentially to multiple competitors.

Information technology is systematic, this is the way corporate governance should work as well. At the present time, corporate decision-making tends to be intuitive, non-systematic. This practice must be altered to enable systematic value chain forecasting.

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