Digital Fitness: 
Four Principles for Successful Development of Digital Initiatives

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Abstract

Digital initiatives such as big data analytics at Progressive Insurance can drive competitive advantage. However, digital initiatives often fail to meet their objectives in terms of budget, time, or performance. Why is this the case and what can be done about it? Complementing existing studies of software development methodologies, project management techniques, and the role of the CIO, we focus on the role of the non-CIO organizational leader in successful development of digital initiatives. Synthesizing our own original research with existing scholarship, we introduce four principles for successful development of digital initiatives: generate business value; maintain strategic alignment with organizational and business strategies; leverage technology trajectories; and apply digital economics. Understanding the four principles raises the digital fitness of organizational leaders, thereby reducing risk and raising the chances of success in digital initiatives.

1. Introduction

The senior management of a large retailer observed a shift in its customer demographics towards “digital natives” and needed new ways to connect with this important customer segment. The team decided to ramp up its social media efforts. Facebook, blogs, and Twitter seemed to fit the bill. Adding to the push were recent articles showcasing valuable benefits of social media at other global retailers such as Starbucks. To catalyze its efforts, the retailer hired a well-known social media consultant to help craft a social media strategy. The result was that the CEO started a blog (make the company seem more friendly and authentic), a Facebook fan page was initiated (monitor Likes and become recommended by friends), and several senior executives started using Twitter (share product promotions and industry news with followers).

One year later, product sales remained flat. The marketing manager in charge of the social media effort said he needed more time for social media to “take hold” with customers, though it was unclear what that really meant. The information systems manager, who ensured that all the systems were working as intended, insisted that she had done exactly what the business managers requested. It wasn’t her problem that business objectives were not being met. The CEO was enjoying writing her blog but wondered if it was time well spent. Perhaps she should stop “playing around” with these “tools” and focus on value-added activities?

What went wrong with this digital initiative focused on social media? Senior management was not digitally fit. They did not understand the challenges and pitfalls of digital initiatives, nor did they understand how to apply practical, research-based insights to reduce the risk of being over budget, missing deadlines, and not achieving performance objectives. But what does it mean to be “digitally fit”? A digitally fit leader understands how to generate business value with digital initiatives, how to align digital initiatives with business and organizational strategy, how technology trends affect the longevity of digital initiatives, and how to exploit the dynamics of digital economics.

Being digitally fit is less a set of “how-to’s” and “watch outs” and more a mindset developed over time. Analogous to physical fitness, digital fitness is built up over time, requires regular maintenance, and can provide a host of benefits. Moreover, myriad different “exercises” contribute to digital fitness. The four principles developed in this paper might be viewed as an introductory “workout program” guiding an organizational leader along her digital fitness journey.

In the rest of the paper we review prior research on managing digital initiatives for successful outcomes, review our research methodology, describe the four principles, and conclude with a brief discussion and summary.

2. Prior Research

2.1 Root Causes of Failure

Four types of failure were identified in an analysis of 99 IT projects: people, process, product, and technology issues [33]. Though the projects ranged in
scope from factory automation at a manufacturer to a recruitment system at a financial services firm [34], only two categories (people and process) accounted for the top ten mistakes in terms of frequency of occurrence. Examples of these two categories of failure include insufficient project sponsorship, poor estimation and scheduling, and insufficient risk management. Another example of people issues emerges from a case study of three failed digital initiatives in which the authors identify “IT managerial unconsciousness” as a failure mechanism that involves senior managers not grasping the importance of IT governance in achieving successful project outcomes [5]. “Strategy blindness” has been invoked to refer to the inability to achieve strategic objectives, emphasizing the strategic nature of digital initiatives [4]. A recent review of articles in 18 leading IS journals identified key failure mechanisms, including unclear goals, contractor issues, user issues, overly optimistic cost forecasts, resistance due to power or work process issues, IT considered a magic bullet, lack of top management commitment, and technology uncertainty [37].

In sum, prior research emphasizes that successful digital initiatives rely as much on effective strategic management such as alignment with existing strategies as they do on technical capabilities such as software engineering [4, 15, 27]. Viewed through the lens of digital fitness, prior research suggests a set of common pitfalls of the digitally unfit (Table 1).

| Silver bullet syndrome: belief that technology will magically solve business problems [33]. |
| Digital optimism bias: predisposition to assess outcomes of digital initiatives in an overly positive light not supported by past experience [42]. |
| Framing myth of tools: use of the word “tool” creates belief that such systems are more like garden shears (simple) than socio-technical systems (complex) [36]. |
| Out of sight, out of mind: intangible assets are not optimally leveraged for value generation [8]. |
| Us-versus-them mentality: Information technology (IT) personnel are excluded from business conversations [33]. |

### 2.2 Prescriptions for Success

Scholars have adopted several perspectives that highlight the importance of strategic issues in successful digital initiatives. Success criteria have been categorized into two types: process-related (time, cost, product) and outcome related (use, learning, value) [32]. The idea that learning can be an important project outcome has also been emphasized in the case literature [20].

Beyond success criteria, other scholars have developed IT project management process frameworks. For example, a six-step process for developing digital initiative business cases was developed as follows: 1) define business drivers and investment objectives; 2) identify benefits, measures and owners; 3) structure benefits; 4) identify organizational changes enabling benefits; 5) determine explicit value of each benefit; and 6) identify costs and risks [45]. Another perspective is identification of skill categories important to digital project management, such as client management, communication, general management, leadership, personal integrity, planning and control, problem solving, systems development and team development [31]. The role of an effective project management office (PMO) has also been highlighted as a critical success factor [26]. For example, case study research of PMOs suggests that the degree of strategic alignment between a digital initiative and business strategy can raise the chances of success [22].

### 2.3 Strategic Leadership by Non-CIOs

As indicated by the above literature, scholarship on IT project management provides an important foundation for understanding root causes of failure and developing effective processes for managing digital initiatives. The project management perspective and related skill sets have been a focus. However, strategic issues such as alignment and business value generation have also been recognized as key to successful realization of digital initiatives [4]. After all, it is senior executives that typically initiate large-scale digital initiatives, set high-level objectives, allocate budgets, and ultimately bear responsibility for outcomes.

On the one hand, the role of the CIO is clearly critical and has been well researched [14]. In addition, the importance of the relationship between the CIO and the top management team in delivering on firm performance has also been examined [21]. On the other hand, the role of the non-CIO executive sponsor is also critical but is less researched. As emphasized in research on top management teams: “studies rarely consider individual functional TMT [top management team] members’ influence on strategic decision making … this shortcoming is surprising and confirms the need for research.” [30, p. 72]. A rare example is a study examining which digital issues global finance executives perceive to be critical or important, with business value, business change, and alignment cited by the majority of respondents [39]. Thus, given the critical role of non-CIO senior leaders in developing digital initiatives,
we develop four principles to support digital fitness, reduce risk, and enhance success. To emphasize, by focusing on the role of non-CIO executive sponsors, our approach is complementary to prior research focusing on project management offices, project management, software development methodologies, and the CIO.

3. Research Methodology

We conducted an extensive review of prior research examining the role of the non-CIO executive in leading digital initiatives. We also examined more than 100 digital initiatives within actual organizations collected from student projects conducted over the past 8 years. Several insights resulted from our review of pertinent scholarly research and digital initiative projects conducted in actual organizations.

First, business leaders tend to lack awareness of the strategic potential of IT [23], which may be mitigated by the quality of the relationship between the CIO and top management [18]. Research also suggests that business leaders lack an awareness of key patterns of authority regarding digital initiatives [5]. This overall lack of awareness can jeopardize the success of digital initiatives, given the important role of non-IT business leaders. Thus, a simple framework for digital fitness that is easily described and remembered may raise awareness and mitigate this issue observed in prior research.

Second, there appears to be a contrast between scholarly research, which focuses on quantifying the value of digital initiatives [41, 48], and actual digital initiatives in organizations, which focus on identifying different dimensions of business value for a given project and providing qualitative and quantitative assessments of different value dimensions. While some papers have begun to identify dimensions of IT business value, such as financial, quantifiable, measurable observable [45] or financial, effectiveness, personnel, system [16], we could not find any papers that provide a set of comprehensive dimensions of value. From this insight, we examined each of the organizational projects to determine a set of value dimensions. Each initiative was examined to determine what type of value was expected to result from the project and what type of value was actually generated. The resulting five dimensions are described below.

Third, we observed a tension in the scholarly research with respect to knowledge about information technology itself and its unique evolutionary path. On the one hand, these “nuts and bolts” issues are not typically identified as being important for non-CIO executives [23]. When they are, they are often framed as a challenge rooted in rapid technological change [12]. On the other hand, given the nature of the underlying information technologies, it is difficult to imagine a business leader being digitally fit without having some awareness of the unique characteristics of IT, which can enable strategic vision for large, multi-year digital initiatives such as the development of OnStar. We thus include this as a dimension of digital fitness, as described below.

The fourth and final insight concerns research on what might broadly be termed “digital economics” [6]. Digital initiatives can shift or transform market dynamics, making digital economics critical knowledge for digital fitness. However, the digital economics literature within IS research is a distinct research stream. Beyond a seminal text on the topic that is now 15 years old [43], there has been no recent distillation to our knowledge of what we know about digital economics (long tail, online pricing, sharing economy, etc.) aimed at the general manager. Given the significant relevance of these concepts to digital initiatives, we include digital economics as the fourth principle.

4. Four Principles

Based on the aforementioned research review and analysis of over 100 digital initiatives, we propose four fundamental principles of digital fitness for successful development of digital initiatives: 1) generate business value; 2) maintain strategic alignment with organizational and business strategies; 3) leverage technology trajectories; and 4) apply digital economics (Figure 1).

![Figure 1: Four Principles of Digital Fitness](image_url)

4.1 Generate Business Value

Analysis of how and to what extent information systems generate business value in organizations has
been one of the most active research streams in IS scholarship [2, 17, 28]. Our research review as well as our own analysis of over 100 digital initiatives yielded five dimensions of business value, which may not be considered at the outset of digital initiatives by the non-CIO sponsor. Understanding the nature of these business value dimensions prior to initiating a digital initiative can reduce risk and enhance project effectiveness, as we now describe.

The first principle of digital fitness is therefore to generate business value by understanding the five dimensions of value that are possible, how they occur, and how they can be optimized. Each of the five dimensions is unique and requires deliberate actions to ensure success, such as redesigning work routines. We summarize the five dimensions into an easily remembered acronym – PRISM – that stands for business value arising from Products and services, pRocesses, Intangibles, environmental Sustainability, and Mobilizing options (Figure 2).

**Figure 2: Generate Business Value**

The first business value dimension is **enabling or enhancing products and services**. Increasingly, manufactured products are adding an IT-enabled service component to enhance the product offering and generate new sources of revenue. For example, GM introduced OnStar to increase the value and differentiation of its vehicles. OnStar is a digital service that provides safety, security, vehicle information, and other services that add value. OnStar users receive a monthly email with simple diagnostic reports on their auto’s functions, such as tire pressure, oil life remaining, and other data collected in real time from their vehicles via the voice-enabled OnStar interface. This recurring monthly subscription fee is a direct positive benefit to OnStar’s and GM’s top-line growth. Challenges to enabling or enhancing products and services include service experience design, operational efficiency, and market assessment.

The second dimension of business value is **process enhancement and transformation**. This value dimension involves using information systems for enhancing process efficiency (new product development, operations, accounting, etc.), and was the most frequently occurring in our set of more than 100 projects. An example of process efficiency is the use of radio-frequency identification (RFID) technology to track the location of cargo ship containers, resulting in lower costs due to more efficient routing and location information. Another example is workflow software used to enhance tracking of sales cycles, particularly valuable in industries with long sales cycles such as elevators and certain types of consulting. By automating handoffs and updates, bottlenecks and lags can be minimized. Another benefit is risk mitigation, as alerts can be programmed to mitigate problems before they mushroom into major issues. Challenges include the need to change workplace routines, redesign processes, and align incentive schemes.

The third business value dimension is **intangible value**: a variety of difficult-to-quantify benefits such as enhanced branding, knowledge sharing, development of human capital, collaboration, knowledge management, recruitment relationship development, and regulatory compliance. IS may enable (or drive) strategic transformation by remaking the competitive landscape and overturning established business models, such as the music industry in recent years. Internally, IS may drive a transformation in culture in line with a new business strategy, such as a bank going from a reactive, information-silo’d culture to one focused on customer intimacy enabled by systems for collaboration and knowledge sharing [15]. Other types of intangible benefits include enhanced brand management from the use of social media and mitigating risk due to enhanced information transparency throughout the firm. Challenges include assessing intangible benefits in the absence of simple metrics, and understanding what is possible ex ante.

The fourth dimension of business value is **environmental sustainability performance**. As fossil fuel and water resources become scarce, fuel prices rise, and carbon emissions emerge as a strategic risk, digital initiatives can enable strategic management of environmental resources [29, 47]. For example, a carbon management system may enable achievement of a corporate goal of a 20% reduction in greenhouse gasses by 2020 by capturing and storing pertinent
data and reporting and predicting the impacts of real and potential projects on organizational performance [40]. Another example is the use of sensors to enhance the eco-efficiency of firms by reducing energy use [46]. Environmental sustainability has not been emphasized in prior literature as much as the other four dimensions of value. However, given increased use of digital hardware that uses significant energy resources, the ability of IT to act as an enabler of reduced energy and water use, as well as increasing prices of fossil fuels, sustainability is emerging as a key business value dimension. A key challenge of the environmental sustainability performance dimension of generating business value is its newness, including new metrics, standards, and regulations.

The final value dimension of business value is mobilizing options, which refers to leveraging an existing digital platform to achieve additional value [19]. Many digital initiatives involve benefits that may result at a later date, such as leveraging data gathered from in-vehicle logistics management systems for new purposes. As an example of mobilizing options, a large bank developed an integrated trading system for foreign currency. Later, after the system had achieved its intended value of improving customer service and transaction efficiency, the bank was surprised to learn that its customers were most delighted with its heat map, which was enabled by the data collected by all its users (inflows and outflows of currency color-coded across nations). The heat map illustrates the valuable conversion of data (raw facts without context – list of trades) into information (processed data put into context – color-coded map) and knowledge (combining information with tacit knowledge in human mind – noticing that red zones often correlate with political incidents in more than one country). Though often unanticipated at the outset of IS initiatives, scenario planning can reveal the potential for options at a future date once the system has been in place. For example, OnStar realized that its data on call location would not only be helpful to assist its customers but also to alert authorities about unforeseen events, such as real-time evacuation routes and traffic flow in advance of Hurricane Katrina.

In summary, the responsibility of the organizational leader regarding business value is to 1) collaborate with key stakeholders to identify which dimensions of value are primary and which are secondary, 2) develop metrics that can be used ex ante and ex post, and 3) understand the roles and responsibilities of all stakeholders in ensuring business value realization. Regarding the last point, the digitally fit business manager must ensure that complementary organizational processes and structures are identified and implemented.

4.2 Maintain Strategic Alignment

Strategic alignment refers to the mutual reinforcement and support of three types of firm strategy: business strategy (where is firm going, and how will it get there?), organizational strategy (structures, processes, values, etc.); and information systems strategy (what information services to provide and how to provide them?). Business strategy, organizational strategy, and IS strategy have been referred to as a “strategy triangle” in the literature [38], drawing on decades of scholarly research on IT alignment [12].

In alignment, the triangle is represented conceptually as equilateral (Figure 3). However, if one of the three strategies changes (e.g., IS strategy due to a new knowledge management system rollout), misalignment may occur if the organizational strategy is not appropriately adjusted, diminishing prospects of success. Driven in part by rapid technological change (see Principle #3 below): “nonalignment is the natural state of organizations, and strategic alignment is temporal in nature.” [10, p. 177].

![Figure 3: Maintain Strategic Alignment](image)

Regarding information systems strategy, three types of IS services delivered to users are functional services (individual productivity software such as
spreadsheets and CAD/CAM), collaboration services (email, social media, etc.), and enterprise services (enforce business processes such as enterprise resource planning system) (adapted from [25]). Many digital initiatives fail because there is a “strategy blindness” [4] involving changes to information systems strategy, but no accompanying change to structures, processes, incentives or other aspects of organizational strategy. Another failure mode is implementation of a new information system that does not align with business strategy. Changes to business strategy or organizational strategy can also trigger the need for changes in IS strategy. An example is adoption of a customer intimacy business strategy triggering the need for better data and information on purchasing habits, demographics, and sales channels [15].

IS research in the banking industry has demonstrated that the extent to which business strategy is “enabled, supported, and stimulated by information systems strategy” drives the ability to gain information-based advantages [10, p. 164]. More recent studies demonstrate various aspects of alignment dynamics, including how process-level alignment can spill over to deliver benefits downstream in the value chain [44] and how complexity theory can be applied to view strategic alignment as steps in a process at the individual, operational, and strategic levels [7].

A review of alignment research synthesizes developed knowledge into a set of managerial recommendations. These include sharing the responsibility for alignment between IT and business executives, knowledge sharing so that IT personnel are more business oriented, education of business executives concerning the importance of alignment, the use of capital budgeting to enforce alignment, embracing the inevitable change that alignment requires, and, in the longer term, shifting culture and informal structures to support cross-functional teamwork [12].

In summary, the responsibility of the organizational leader regarding strategic alignment is to 1) understand the implications for all three strategies of the new digital initiative, 2) develop and implement changes to organizational strategy that complement and support changes to the IS strategy, and 3) ensure that the digital initiative aligns with business strategy. Regarding IS strategy, the digitally fit business manager must understand how technology trajectories impact IS strategy, as we now discuss.

### 4.3 Leverage Technology Trajectories

Understanding current and future states of underlying technologies is critical to understanding the potential evolutionary paths of digital initiatives. As described in the previous section, current services provided by information systems include functional, collaboration, and enterprise. Understanding technology trajectories provides valuable perspectives on these three services. For example, functional services such as spreadsheets and word processing software are shifting to collaboration services (as exemplified by Google Drive) due to underlying technology trajectories, as we describe below.

Despite its importance and in contrast to the other four disciplines, technology and technology trajectories have not accounted for a large body of IS research [cf. 9, 13, 24]. As one review of articles in a leading journal put it: “information technology is not a major player on its own playing field” [36, p. 130]. An exception is a conceptualization of technology trajectories by the component, product, and infrastructure dimensions of IT [1].

Three technology trajectories are pertinent to the strategic management of digital initiatives: rapid technological change, embeddedness and ubiquity, and big data analytics. They are interconnected phenomena, as illustrated in Figure 4 and described below.

**Figure 4: Leverage Technology Trajectories**

The first phenomenon is **rapid technological change**, which refers to the breakneck pace at which information technology is becoming better, faster, and cheaper. Technically, the reason is Moore’s Law: the ratio of performance to price doubles
approximately every 18 months. However, technology trajectories are not about technology per se. They are about opportunities for developing new products and services leveraging this phenomenal rate of change.

The second phenomenon is *embeddedness and ubiquity*, which refers to the insertion of digital logic and networking capabilities (components) into an increasing range of physical objects (products), comprising a digital ecosystem (infrastructure) [1]. Physical devices are becoming smarter and more aware of their environment, from cars to vacuum cleaners to heart monitors. Small, low-powered sensors, such as the ZigBee standard, are an enabler of these new types of devices.

The third phenomenon is *big data analytics*, which refers to software that enables users to sift through increasingly vast amounts of data to find valuable insights for generating business value. An example is smart meters, which increase data collected on household energy use by a factor of 1000. One type of platform related to big data analytics is in-memory computing, which allows for real-time analysis of very large data sets that dwarf what is possible with current server architectures and software (e.g., laptops running spreadsheets).

Taken together, the three phenomena can be described simply as the underlying IT getting faster and cheaper, leading to greater use based on the principle of substitution, leading to exponential increases in data generated and new software platforms for managing and analyzing these new data for business insights.

In summary, rapid technological change, embeddedness and ubiquity, and big data and analytics are three important phenomena that are enduring and helpful for understanding technology trajectories. While many specific technological trends exist, such as cloud computing and social media, the three trajectories that we describe are intended to be generic and independent of particular technologies.

The responsibility of the organizational leader regarding technology trajectories is to 1) understand the three phenomena of change, embeddedness, and analytics and how they might shape a given digital initiative, 2) collaborate with IT personnel to develop a shared understanding of how technology trajectories can be exploited, and 3) leverage technology trajectories to assess technology risks such as platform obsolescence. Finally, the digitally fit business manager must also understand the digital “rules of the game,” which we now summarize.

### 4.4 Apply Digital Economics

Insights generated from the economics of IS literature can be grouped into four broad categories: *pricing*, *selling*, *competing*, and *externalities* (Figure 5). What follows is a thumbnail sketch of some of the more salient insights. It is not intended to be comprehensive, rather, to provide a brief overview of some of the more important insights.

![Figure 5: Apply Digital Economics](image)

Three insights regarding *pricing* are: 1) price based on value to consumer, 2) vary pricing with time due to network effects, and 3) exercise caution when using data mining for individual pricing online. We now consider each in turn. Pricing a digital good with nearly zero marginal cost (such as an e-book) should be driven by the *value to consumer*, rather than marginal cost [43]. The second insight concerns network effects: the value to the user increases as the number of users increases. For example, LinkedIn was not nearly as valuable to the first 100 users as it is to today’s millions of users. The insight for pricing is to price lower at the beginning when the value to users is lower, and then increase pricing as time goes on and value to users rises. The third insight concerns the use of data mining to individually price digital services. A remarkable feature of the digital economy is the incredible amount of information available to sellers about potential and actual buyers. Effective capture and mining of this data can yield insights about who is willing to buy what, when, and at what price. What does digital economics suggest? Emerging results can sometimes be counterintuitive.

For example, in the old economy with much less
information, blanket promotions were typically used to spur demand. In the digital economy, it is possible to use individual characteristics and preferences of potential buyers to price dynamically on that specific person’s willingness to pay. But recent results suggest that companies can’t use this information too liberally, lest buyers stop providing it [3]. Thus, the use of buyer information to sell better should be done with caution as more is not always better.

Four insights regarding selling are the importance of experience goods, the role of lock-in, crowd-sourcing, and the long-tail. Regarding experience goods, many digital goods and services are experiential, which means that they must be experienced to be understood. Basically, the user doesn’t really “get it” without trying it. So when it comes to digital goods and services that must be experienced, consumers must be allowed to try before buying [43]. This is the reason for selling models such as “freemium,” in which a basic version of a software app is free (so the user can experience it) and a more professional or advanced version is available for a fee. Regarding lock-in, despite the lure of better and faster, consumers may hold off because they are locked in. For example, old media may not play on new players or data may be difficult to transfer. High switching costs can lead to lock-in, which, if managed appropriately, can enhance profits. Regarding open source, selling in the online economy often involves open source. This means making software code available to the user community so that they can collectively make enhancements. The benefits of open source can include faster upgrades and lower costs of operations. At the same time, from a competitive aspect open source software can often act as an enabling mechanism for disruption. For example, statistical software has long been dominated by large entrenched systems such as Stata. However, in recent years the open source competitor R has emerged as a low cost (free) alternative. Though it arguably has less built-in functionality, its openness and flexibility enable its rapidly growing user community to develop and publish packages available for anyone to use. Finally, the long-tail refers to firms selling less of more versus more of less online [11]. In conventional retail, firms traditionally made most of their income on a few products. However, a curious thing has happened in the digital economy. According to data from leading online retailers such as Amazon, firms are selling less of more, meaning their product sales derive from a much larger set of products [11]. This has several implications for operations, one being increased inventory challenges due to the need to stock many more products in the online space.

Numerous insights about competing in the online economy underscore the differences with competing in the physical economy: platform competition, impact of buyer and supplier power, the ability of digital business to disrupt, disintermediate, and unbundle, etc. However, due to space limitations we focus on platform competition. Platform competition refers to the notion that digital platforms or ecosystems are becoming the key basis of competition in the digital economy. For example, TripAdvisor is a travel platform that includes reviews, hotel deals, social aspects such as predictive suggestions based on known trip parameters, and so forth. Trip Advisor competes with other travel platforms such as Orbitz, though they may appear to be very different in form and function. However, the bottom line is that both have similar business models: customers, processes, suppliers, etc. And more importantly, both consider their online communities as core strategic assets.

The last category of insights that we review in our thumbnail sketch of digital economics is externalities. Sometimes companies create issues related to consumers, indigenous peoples, water resources, fresh air, etc. Economists call these issues “negative externalities,” which means costs created by the company that are borne by others. The idea that a company may not want to pay for these problems (and may pay expensive attorney fees to fight such claims) is not surprising, given the profit maximization ethos in global corporations. However, the problems remain. In fact, negative externalities are nothing new to the digital economy. But they have new types and mechanisms. One new area is privacy and security. Data theft is an example in which companies do not take appropriate actions to protect their customers’ data, resulting in data theft and immense costs to individuals. It is not uncommon to read a story in the Wall Street Journal about a large bank or hospital whose data were stolen, including sensitive customer and patient data such as social security numbers, healthcare diagnostic results, income information, and so forth.

In summary, the responsibility of organizational leaders regarding digital economics is to 1) understand the four concepts of digital economics, 2) apply the concepts during early-stages of digital initiative development (for a new product or service in particular) to develop a more compelling business case, and 3) remain up-to-date on digital economics as new findings emerge. Essentially, the digitally fit business manager must recalibrate and update her understanding of “economics 101” for the digital age.
5. Discussion and Conclusion

5.1 Beyond the Four Principles

While the four principles are intended to capture the foundations of digital fitness, they do not cover all necessary and sufficient conditions for success in digital initiatives. Moreover, our description of each of the four principles is necessarily brief. However, despite these boundary conditions, we believe that the four principles represent a solid beginning towards a complete understanding of digital fitness.

Future research might expand on the principles by determining their efficacy. For example, a study comparing digitally fit senior executives with those that are less so might use the four dimensions to compare and contrast, thereby refining their application. Another potential study would be to examine whether firms with more digitally fit executives perform better than others, or, whether digitally fit executives enjoy higher success in their careers. Finally, it would be interesting to examine executives’ own perceptions of their digital fitness, to determine whether they perceive their fitness accurately.

5.2 Summary

Similar to being physically overweight, the lack of digital fitness leads to a range of “health problems” that manifest themselves again and again across all industries. The four principles, based on a synthesis of prior research and analysis of more than 100 digital projects, are intended to directly address this lack of digital fitness. The principles are intended to be a point of departure for leading digital initiatives. Moreover, the principles are intended to be enduring in nature, not limited to technology fads, and to span all functional disciplines. At the same time, they are focused more on value generation than IT operations and risk reduction, the latter including such critical areas as security and risk management, IT audits and compliance, and vendor management. Coupled with effective project management, the four principles of digital fitness may reduce risk and enhance outcomes of digital initiatives, the extent of which can be examined in future empirical research.

6. References


