# Table of Contents

- **Abstract** 3
- **The Digital ROI Challenge** 3
- **Two Blueprints for a Solution - That Don’t Benefit Everyone Equally** 4
- **Digital Power for Established Companies: Combining Lean and Digital** 6
- **Delivering Enterprise Impact in Large Organizations** 9
- **Where to Start: Bridging Between Seemingly Disconnected Worlds** 13
- **A Lean Digital Future for More Tangible Impact** 15
ABSTRACT

Digital technologies are radically changing how enterprises run, arguably with greater and deeper impact than that of any previous IT evolution. Many industries – and their competitive dynamics – will be forever altered.

There are challenges, however. The surge of digital transformation will also result in misguided efforts. In fact, our research indicates that if the right strategies aren’t adopted, nearly US$400 billion per year could end up in initiatives that return inadequate ROI. What’s more, these mistakes could provoke strategically dangerous delays in adopting digital business and operating models—and that could result in significant missed opportunities.

The current challenge has several root causes. For one thing, many established companies aren’t able to align initiatives to deliver measurable impact. As well, some are slow to embrace digital for the value chain beyond the front office. For other firms, the complexity of legacy technology, processes – and sometime people – seems insurmountable.

Yet solutions exist. Our experience indicates that a combination of classic and cutting edge methods – specifically, Lean principles, advanced digital technologies and a discovery process that involves design thinking – is powerful, practical and may prove effective for large enterprises. This approach can help companies do what the Lean startup movement has done for fast-growing challengers: harness digital’s revolutionary power in an agile way. It will also help prevent the digitization of broken processes, can simplify interventions and can discourage the bias towards small, tactical improvements that some Lean management practitioners have. Perhaps most important, these methods harness digital’s power to completely reimagine the middle and back office, thus unlocking disproportionate client value. Ultimately, the emergence of Lean Digital practices can help many generate material impact through the latest technology, faster.

THE DIGITAL ROI CHALLENGE

Technology represents 40% of the entire capital equipment investment of mature economies such as that of the US, yet much analysis has been done over the years suggesting that many enterprises struggle in deriving full benefit from new technologies. That state of affairs is no longer an option. Technology is profoundly reshaping the way business is done. It is crucial to avoid the pitfalls that can come with swift technological developments.

Yet as was the case with previous technology waves, measurement of returns on digital initiatives is a work in progress. At best only half of organizations build robust business cases and the lack of clear quantification of impact is a significant source of frustration for many in top management. All the more reason to try to apprehend the scale of the issue and devise solutions to govern investments effectively.

As a first example, studies indicate that as of 2013, ERP project cost overruns totaled 53% and duration overruns were 72%. Meanwhile, in a Boston Consulting Group analysis, two-thirds of companies reported receiving 50% or less of expected benefits. As well, on average only 33% of significant IT projects have been fully successful since the year 2000. Worse, that figure falls below 20% for projects larger than US$3 million. There is no reason to believe that digital projects will fare better—especially given their newness not to mention the relative lack of established methods, frameworks, benchmarks and resources to implement them.

A rough estimate suggests that all current digital efforts worldwide cost about US$593 billion yearly. That means up to US$394 billion – a staggering number—is now being spent on efforts that deliver insufficient ROI. While this is an approximation, it is close enough to give CEOs pause—and the figure doesn’t even include the opportunity cost of business benefits that will not accrue to enterprises because of those less-than-effective efforts. These are unacceptable numbers.

Our own recent research indicates that in excess of 50% of operational executives see at best “some” benefits from digital technologies implemented so far. This indicates at least a gap between mid-level management teams’ perspective and C-suite’s ambitions which has the potential to derail change.
Starting 10 years ago, two major innovations – both rooted in Lean principles – fueled digitally native disruptors and changed the face of business forever. Their key characteristics are described in the figure below.

First, so-called agile software and application development practices disrupted previously lengthy and complex “waterfall” methods. These practices favor short “sprints,” call for more frequent collaboration across teams (through gatherings called scrums, for instance) and attempt to modularize work to make project and architectural orchestration more manageable. Available data\(^6\) show that the percentage of success for waterfall type projects is about 11%, while the equivalent rate in agile project is about 39%.

The second milestone was the spread of the “lean startup” movement, with its focus on experimentation and quick feedback loops, reaching “minimum viable products” fast to get real market feedback. In other words, creating a little deliberate “waste” early to avoid more wasted time and resources later.
Agile and lean-startup practices have in common their ability to cope and even thrive in hyper-competitive, dynamic markets with a high-speed rate of technological change. Both have well served digitally native startups leaders, who can now run experiments - not just traditional pilots - much faster and more cost effectively.

Established players, however, grapple with legacy systems - technologies, processes and often people—that “cement” them in what is often the wrong place. No wonder that at the current rate of churn, 67% of the S&P 500 will exit that group within ten years. The inertia created by legacy operating architectures is such that it requires very significant change management capacity and capability, which isn’t available to many. In fact, 35% of the executives we recently polled cited legacy systems, change management and budget as their top three challenges—each one as significant as the next. And analyst Gartner coined the term “bimodal IT” to capture the essence of a new technology strategy whereby, two separate, coherent modes of IT delivery, one focused on stability and the other on agility co-exist and are managed differently.

As a result, established companies have a harder time applying such practices at scale and experience a high proportion of digital transformation failures. In many cases, most of their efforts are directed towards the transformation of the front end of the user interfaces with clients. These efforts, however, often falls short of enhancing the overall user experience because of the client dissatisfaction created by middle and back office. Interestingly, research conducted by MIT indicates that over 70% of companies, irrespective of their digital maturity level, focus on improving customer experience. By contrast, under 50% of the less mature firms aim for a more holistic transformation of business, compared with almost 90% of those who are mature in their digital journey. Clearly, those who understand the power of digital try to connect dots between the front end and the processes that make their company run.

Examples of digital impact. Digital-native enterprises built on these principles run at unprecedented levels of efficiency and effectiveness. The best digital retail lending institutions have efficiency ratios ranging between 20% and 35%, compared to 55%-60% of the top banks. Their cost of origination, for instance, is often 70% lower or more compared to their traditional competitors, ranging from 60% lower in the front end, to 80% lower for middle and back office functions. The cost per client follows a similar pattern. Emerging market disruptors like China’s WEBank exhibit even more polarized economics, something an entity such as Facebook can also demonstrate. While reimagining operational processes and doing away with many of the constraints of traditional players’ legacy, they can also build a clean set of data structures that can help reconcile data between CFOs and Chief Risk Officers, thereby enabling a less cumbersome fulfillment of regulatory duties. The latter point is particularly important because many financial services executives initially discounted the ability of new players to scale in the face of regulatory and risk scrutiny that large banks attracts. This scrutiny forces large financial institutions to devote significant resources to reconciliation and modeling of data just to comply with the rules. It is highly likely that emerging competitors will reach the critical mass that attracts regulator’s attention soon, but they will be able to address those challenges in a leaner manner.

Digitizing broken operations: a typical scenario of “glitzy yet clunky” digital

Most customers prefer to communicate with their banks via the web than by any other means (59% of all adults according to a survey we ran recently). Younger ones prefer mobile – a channel that virtually didn’t exist only 10 years ago—to branch banking. Yet despite the sleek user interface they are likely to encounter, people buying financial products or conducting more significant bank transactions are often amazed at how little their banks know about them. As well, these consumers report a surprising number of glitch-prone interactions.

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7 Operating expenditures as % of outstanding loan balance
8 Innosight/Foster/S&P
9 Sloan Management Review, Fall 2015
10 YouGov polling 1000 adults in the UK, Q2 2014
11 Everest Research, APEX Matrix for the U.S. retail banks, July 2015

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Such issues are not confined to banks. Insurers, healthcare, consumer products, hospitality, high tech and many others struggle to keep the overall experience aligned with expectations created by increasingly sophisticated front ends. Why don’t client service employees know my name when they hand me over to another representative? Why does it take a month to get a mortgage approved or denied? Why doesn’t my credit score reflect my behavior? Why doesn’t my healthcare provider offer insightful and proactive support? Why can’t my personal leave system work on mobile? These are all questions that end users ask. More often than not, the front end is sophisticated, but its intelligence is limited, and its speed underwhelming.

A typical cause is to be found in the morass of legacy systems across back and middle office, tasked with keeping records, and managing risk, built in silos over decades and further complicated by the recent surge in regulatory compliance. Stratification of aging systems is one of the thorniest issues a CIO faces, and only the best ones – or the ones with the best alignment with their business counterparts—keep that proliferation in check. For others, collecting and combining purchase patterns, risk profile, interaction preferences and other data to enhance the customer experience often turns into a massive (and prohibitively expensive) change management exercise. The process frequently gets stranded on database conversion, privacy and other technical or process issues. Such challenges aren’t solvable by simply layering advanced digital tools atop an existing business process landscape. The result of doing so, in the words of an executive in a large global bank is “glitzy, clunky digital.”

**DIGITAL POWER FOR ESTABLISHED COMPANIES: COMBINING LEAN AND DIGITAL**

Nonetheless, we believe that the future can be bright for established players, endowed with remarkable assets—such as brand, data, client relationships—that can thrive thanks to digital technologies.

The answer to many of their challenges lies deep in the very practices that make the startups powerful. At the root of both agile and lean startup methods is a comparatively classic set of concepts derived from manufacturing practices pioneered by Toyota and General Electric (GE). That is, lean manufacturing – or simply Lean.

Lean initially proved itself in complex manufacturing environments and then in equally complex service delivery organizations. Part of the system’s effectiveness stems from its relentless attempts to simplify and weed out unnecessary work. It does so by focusing teams, across functions, on what really matters to achieve a pre-established, finite set of goals aimed toward customer impact. This isn’t a naturally occurring situation in large projects: For instance, in our poll12, only 30% declared their companies could successfully align digital interventions with business outcomes.

Lean core principle is (a) maximizing customer value while (b) minimizing, not eliminating, waste. Both are particularly useful for large enterprises. Customer value can illuminate the true north often lost in the maze of organizational layers, whose byzantine complexity and resulting idiosyncratic end-to-end processes are too often translated into code that is both overly complex and hard to evolve. As well, seeking the minimization of waste provides a practical lens to reduce the displacement of existing legacy processes and systems.

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12 110 executives of shared service operations, polled by Shared Services Link in Q2 2015
The application of Lean to reimagine business architectures through digital rests on two tenets.

1) **Define the true north.** The classic approach of Lean seeks to deliver value efficiently to the customer while connecting strategy, goals and actions with measurement. The modern interpretation of Lean principles suggests that companies should identify what value is before jumping into efficient delivery. The practice of design thinking has marked a significant milestone in this respect. Developed out of the successful intersection between technology and design – Apple devices are the best and most famous examples of it – design thinking fosters a deeper and more unconstrained understanding of client and stakeholder motives to unearth sources of business value.

2) **Deliver at scale.** This involves enabling workers and discovering new ways of working—typically by identifying and building (through specialized workforce planning, upskilling, redeployment), augmenting (through technology and organizational models), energizing and directing (through culture) human resources.

Both can create a solid and practical foundation for digital transformation initiatives.

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**LEAN PRINCIPLES APPLICABLE TO DIGITAL TRANSFORMATION**

**DEFINE THE TRUE NORTH**
- Explore value sources, and deliver efficiently to customer
- Align strategy, goals, actions through metrics
- Understand operational cross-function linkages that create value
- Pinpoint what’s valuable, avoid the rest

**DELIVER AT SCALE**
- Enable workers
- Discover new ways of working
- Right resources and culture
- Right organizational models

Two pillars can be built on the basis of these tenets.
Pillar one—True north: Deliver value efficiently to the customer and connect strategy, goals and actions with measurement

Lean methods require a deep understanding of customer value, as well as the ability to recognize how operational linkages generate it.

Understand the cross-function operational linkages that create that value. Lean requires design and operations teams to understand and appropriately metricize the chain of activities, from front-end interaction to middle office and back office processing, which affect critical customer experience variables such as time to response, administrative burden put on the client, etc. The most efficient path to customer delight is identified and interventions are applied surgically but holistically across front, middle and back office, rather than via front-end interventions that have marginal standalone utility. Ultimately, a combination of design thinking discovery of client needs, with the ability of Lean to implement the changes can serve well very complex digital efforts.

Pinpoint what’s valuable and avoid the rest. Lean focuses on understanding upfront what customers value. In that respect, Lean is compatible with the design thinking practices of many digital startups (and by now even established players like SAP). It is critical to realize that the impact of Lean is often blunted by the benchmarks enterprises choose to drive the reimagination of processes, people and – importantly – technology. That’s why many Lean interventions have limited, tactical impact. However, that is not what Lean methods are intended to do and indeed the application of design thinking practices to break the commonly applied incremental approach has great promise.

Pillar two—Deliver at scale: Don’t just displace workers. Enable them and discover new ways of working

These practices focus on optimal resourcing of the run time of the business processes that deliver value to the client.

Use appropriate resources. While the debate about substituting people with machines rages on, much work will continue to be done for a long time by a combination of them—that is, by people augmented by machines. Even now, digital technologies such as cognitive computing or natural language processing (NLP) are increasingly used to support expert human decisions. These can range from estimating the profitability of a client’s premium before underwriting to assessing the likelihood of fraud of an insurance claim, to predicting the time-to-failure of critical parts in aircraft engines. The advances in analytics technologies and practices power a step-change in another core characteristic of Lean practices—the focus on institutionalization of experimentation and knowledge. Digitally savvy Lean architects are now able to benefit from feedback loops of unprecedented speed, breadth and depth that enable them to build “intelligence” into operations that can now sense, learn and act appropriately.

Enable the right culture. Lean advocates the creation of a strong culture focused on the maximization of client value while minimizing waste, aiming to maintain alignment of efforts toward clear business outcomes through the disciplined use of metrics. These tenets can be useful when embarking on digital transformation and will help enterprises keep focus on the true north of business impact rather instead of succumbing to the excitement and scope creep that is common when implementing advanced new tools.

Reimagine organizational models. Advanced operating models such as shared services and their more recent and comprehensive avatar, global business services, benefit from Lean – indeed, all the more so in a time of digital evolution. Companies such as GE pioneered the use of Lean methods when building their first large, globally distributed operations as a method to scale up process engineering capabilities. Indeed, Genpact was born from that effort. Today, much digital technology is being deployed in these large shared environments that interact with other parts of the organization and with partners. They benefit from Lean practices to manage the complexity of these networks interactions.
Based on extensive experience in technology-rich environments, we’ve observed that Lean principles can be successfully applied to today’s digital environments at the core of large enterprises. This is what we call Lean Digital℠.

Lean digital drives impact by architecting how enterprises run beyond the front-office into middle- and back-offices, by focusing on what generates step-change business outcomes and by avoiding the rest. This is particularly important in large enterprises that, as described in the “digitizing broken processes” box above, have tiered and often siloed organizations, and rely on complex legacy systems for their operations.

There is a fine balance to maintain when breaking free of incremental, constrained process redesign through the use of advanced technology: the appeal of digital tools can subvert the economics that can generate practical impact. The chart below shows the architecture of a generic process—composed of an (often client facing) execution part, a “provision of visibility” portion (often back office) and a steering component that is likely to rest with business leaders. Such schema, as well as the related data, constitute a broad enough canvas to sketch out new end-to-end processes, while respecting the fundamentals needed for business impact.

In this example, the order-to-cash process of an electronics distributor suffered from a number of challenges described sequentially—from operational fragmentation to poor communications between sales and credit groups.

Global Electronics Distributor

1. Business growth from acquisitions fragmented plant operational processes and hampered scalability
2. Large volume of small balance accounts and unaddressed disputes aging >90 days
3. Limited ability to dynamically risk segment AR portfolio
4. Poor communications between Sales and Credit regarding customer credit and AR activity
   • Inability to rectify wrong order decisions quickly
5. Lack of system tools to risk segment AR portfolio and enable automated treatments
   • ERP not designed for credit and collections effectiveness
Instead of defaulting to an incremental process improvement, or a wholesale rip-and-replace of numerous systems, the Lean Digital approach enabled the client to focus in a practical way on the key end-to-end action-to-data-to-insight-to-action steps that delivered on the intended business outcomes. Specifically, Systems of Engagement (SoE)™ helped reimagine processes, making them proactive, and made enterprise Accounts Receivable operations intelligent—able to sense, act, and learn from the effect of their actions at scale.

**Enhanced execution**
- Systems of engagement for collections, credit dispute management, cash forecasting, reporting and analytics
- Enhanced collection strategies and auto treatments
- Standardized business processes across NAM, APAC, EMEA

**Run data-to-action**
- Delinquency by client segment, region
- Outlier accounts timely detection
- Collaboration with regional plants and sales forces to determine root causes
- Simulation of cash flow and margins scenarios for large contracts

**Continuous learning**
- Test new algorithms and better policies
- Optimize tech infrastructure performance

**Identify target outcome**
- DSO, delinquency, non-compliant cases, fully auditable orders, large order margin
- Identify metrics: e.g. percentage past due
Retail banks are among the biggest potential beneficiaries of digital transformation thanks to the inherently digital nature of their services. They now have the ability to orient client traffic towards the most effective client channels based on the client preference insight derived from interactions with similar clients. By doing so, they can optimize the customer experience and the cost of the transaction at scale, in a way that would have been impossible for the traditional front end and even for digital user interfaces in the absence of deliberate cross-channel orchestration.

Commercial leasing providers’ front end sales forces can approve new clients’ capital equipment leases in record time by obtaining a small set of key data points from the client during a person-to-person interaction using agile workflows that globally connect experts (middle office) who can sanction that approval swiftly. This is particularly important when the sale aims at dislodging an incumbent competitor at time of lease renewal.

Life and Property & Casualty (P&C) Insurers can acquire clients more seamlessly through their indirect channels by using data to prioritize policy applications based on sophisticated customer and broker profiling. They can also route the policies to decision-making producers in a manner that matches the complexity of the case with the capability of the employee.

P&C insurers can also adjust policies and future client premiums, by installing sensors in the insured person’s cars, for example. The transparency and data, invaluable to the policy holder, also enables the insurer to better segment future applicants based on the data collected on large samples of similar individuals. In another example, the deep understanding of client needs coupled with middle- and back-office changes enabled an insurer to start offering policies timed in a way that reflected more closely the client’s needs—by doing away with the fixed annual renewals and offering day-based rates.

Life sciences companies can monitor the interaction between clients and contact centers (as well as social media) to identify the commercial and medical effects of newly launched products, and adapt the information for doctors, retailers and clients themselves in an effort to generate “brand love” across the customer engagement.
By looking across industries, actionable patterns emerge. All the above scenarios have (1) a front-end client facing a set of customer journey touch points shaped by different types of sensors (from actual devices to social media), (2) a practical alignment between front, middle and back office and (3) a deliberate design that derives insights from data at each action cycle, making the next action more effective and efficient.

**Technology devices manufacturers** can use product support groups in a similar way, providing product engineers precious and timely data that helps them release updates to the software of the device, as well as evolve their product documentation and operating procedures.

**Industrial equipment providers** can leverage sensor data for constant monitoring of the most mission-critical machines (such as expensive rotating equipment like turbines), or for as-needed checks that would have previously required a visit to a service center (like in the case of heavy trucks). Additionally, the data-to-insight cycles of advanced analytics solutions like GE’s Predix help reimagine the servicing processes performed by engineers by providing them with guidance ahead of time on the procedures needed. This also offers an opportunity for better orchestrating the supply chain of specific parts needed in specific repair shops at specific times.
WHERE TO START: BRIDGING BETWEEN SEEMINGLY DISCONNECTED WORLDS

Lean Digital helps orchestrate three complementary realms. It merges digital technologies, the exploration enabled by the design thinking practices that is increasingly prevalent in the digital world and the classic Lean management principles. Their combination – a nimble substitute or a precursor of the industrialization traditionally enabled by for instance Six Sigma – help direct digital efforts and focus them on what matters without displacing too many legacy processes and technologies. And Lean Digital works both for agile custom approaches or crystallized in business transformation methods like Genpact’s Smart Enterprise Processes13.

As described in the following chart, design thinking will typically precede and complement Lean at the beginning of the journey. Lean leverages the design thinking ideas and help operationalizing them by keeping into account the legacy environment where those ideas will be implemented. In the end, for those area where maturity and stability are important, Six Sigma or equivalent can be applied. Importantly though, Lean management practices can be applied almost throughout the entire maturity cycle—always with the objective of avoiding digitizing a broken process.

Importantly, there are feedback loops both within each of the practices (a recursive path from action, to visibility, to adaptation and subsequent action) and across them. In other words, it is normal to see mature processes that have adopted Six Sigma to at some point require reimagination through design thinking and Lean.

Ultimately, we see a Lean Digital approach proving invaluable at three levels when planning a digitally powered transformation:

1) **Spot the unnecessary in the design phase.** Ensuring that complexity is identified before the beginning of digitization is an investment that pays off many times over. For example, unnecessary process steps that don’t add client or overall business value are singled out at this stage and respective functionality is placed out of scope. Lean can be combined with design thinking methods to ensure that sharp and consistent visibility exists between customer experience/value and the digital transformation design. This relationship can become measurable and measured and inconsistencies can be challenged early to avoid cost and time overruns. An example of such framework is Genpact’s Smart Enterprise Processes (SEP℠), which forces fact-driven choices while maintaining alignment with – and focus on – final business outcomes.

2) **Simplify the build phase.** Supporting a simpler transformation with less displacement of technology, people and processes. That allows change to proceed faster with fewer risks of bad surprises. As well, this simplification permeates the agile software development that powers the new operations. Additionally, the wheel of innovation does not spin at the same rate across front office, back office and middle office. But it all must come together to deliver superior customer outcomes. Lean can materially simplify information and insights flows typical of complex legacy technology, people and processes support - without waiting for that ideal end state.

3) **Enabling the running of a tight ship.** The operation
A LEAN DIGITAL FUTURE FOR MORE TANGIBLE IMPACT

Digital changes the fundamentals of competition in many industries, from manufacturing to financial services. However, today’s challenge is not digital technology; it is the enterprises’ ability to reimagine how businesses run – at scale – by harnessing digital’s power to adapt and compete. It is imperative that organizations don’t digitize wrong processes, and construct their recursive action-data-insight-action flows so that they help their business adapt over time. A practical Lean Digital℠ approach can not only productively harness digital technologies such as Systems of Engagement℠ (SoE℠) and analytics, it can also help construct advanced organizational models and leverage them to deliver enterprise-wide impact. The resulting Intelligent Operations constitute a more rapidly attainable, yet scalable and cost-effective business process platform, built to adapt.

For example http://www.genpact.com/home/solutions/systems-of-engagement
About Genpact

Genpact (NYSE: G) stands for “generating business impact.” We architect the Lean Digital™ enterprise through a unique approach based on our patented Smart Enterprise Processes (SEPSM) framework that reimagines our clients’ middle and back offices to generate growth, cost efficiency, and business agility. Our hundreds of long-term clients include more than one-fourth of the Fortune Global 500. We have grown to over 70,000 people in 25 countries, with key management and a corporate office in New York City. We believe we are able to generate impact quickly and power Intelligent Operations™ for our clients because of our business domain expertise and experience running complex operations, driving our unbiased focus on what works and making technology-enabled transformation sustainable. Behind our passion for technology, process, and operational excellence is the heritage of a former General Electric division that has served GE businesses since 1998. For additional information, visit www.genpact.com. Follow Genpact on Twitter, Facebook, LinkedIn, and YouTube.