To succeed in today’s dynamic digital world, a unique value proposition and an execution strategy can get organizations only so far. What’s needed are customer-focused processes designed through a human lens, powered by new digital tools and optimized by a hyper-connected and digitally acculturated workforce focused on delivering highly differentiated products and services that fuel outperformance, emanating from the business core.
Executive Summary

Ubiquitous digital technologies and tech-savvy customers have wrought deep changes for companies, from redesigning business strategies, to rethinking business processes and operating models. The implications for businesses and the economy are profound, triggering waves of not only disruption and dislocation but also opportunity.

With data fueling the digital economy, we see traditional companies repositioning themselves by reformulating their value proposition. As digitization amplifies information flows, companies are shifting their focus beyond the goods and services they sell, to the value they can create, build on and offer through digitized workforces and intelligent engagement with customers.

What’s become clear is that when organizations are confronted by digital technologies and new customer expectations, changes need to be made to their underlying business, IT operations and services to fully leverage the upside of more flexible, frictionless and intuitive ways of working. In our view, winning companies will be those that:

- **Make the transition from analog to digital over time.** Winners will reconstruct their operations, process by process, around clearly articulated digital principles, and integrate legacy business processes with new digital opportunities. Digital change is about not only supplanting the old but also giving a new lease on life to legacy processes and assets. For example, Kaiser Permanente is using digital technologies to provide low-cost access to providers and facilitate the delivery of both preventive and curative care. As a result, the company has topped the American Customer Satisfaction Index Score for three consecutive years.¹

- **Develop agile digital operations to build sustainable competitive advantage.** Companies that define a unique value proposition and a digital strategy to deliver on it — underpinned by robust digital operations — will realize a sustainable competitive advantage. For example, Schindler Group’s use of IoT, big data analytics and mobile...
Digital Operations

Winning companies will consider co-creation of new processes and the application of new data insights, derived from advanced analytics and secured access to client data.

- Enable a digitally connected workforce. Digital leaders have catalyzed employee performance using mobility and collaboration tools, as well as real-time monitoring and advanced analytics capabilities.

- Build an agile process engine by combining Six Sigma and Lean methods with digital tools. Digital operations refers to a set of capabilities through which businesses can architect an end-to-end process, built around a single reliable data source that enables smooth transaction processing and fosters a culture of continuous improvement, powered by ubiquitous process data and analysis.

- Rewrite the rules of engagement between buyers and providers of services. As service providers bolster their digital operations capabilities, businesses need to move past a “lift-and-shift” approach that’s focused purely on cost advantage rather than the full array of digital upsides. Winning companies will consider co-creation of new processes and the application of new data insights, derived from advanced analytics and secured access to client data.

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Lessons from digital leaders

Digital technologies and mindsets are helping companies across industries architect a customized digital operations strategy that enables them to establish new types of competitive advantage, fortify preexisting ones or fend off threats from digital-native upstarts.

One of the most distinct features of digital technologies such as social, mobile, analytics, cloud and the IoT is their ubiquity and easy accessibility. In fact, most of these technologies are as simple to procure as any over-the-counter consumer-focused technology. When access to digital technologies is so easy, can every company expect to gain competitive advantage? The digital rewiring of operations can be quickly copied, after all, resulting in zero net gain in competitive advantage to each participant. Companies that don’t learn this lesson have as much chance of success as Flat Earth Society members have in navigating around the world.

In a recent study by MIT Center for Information Systems Research, the researchers postulate that a select few companies will successfully engineer a digital strategy, and they’ll do so by seamlessly weaving digital technologies into business processes to fulfill a clearly defined purpose. In our view, this is the digital Holy Grail that winning companies will master by doing the following:

- **Clearly define a business purpose**, which underpins the go-to-market business strategy.
- **Develop a robust digital strategy that advances the business purpose** and fortifies competitive advantage.
- **Design and install customer-focused agile operations and a digital foundation** that catalyzes the digital outreach and customer experience.
- **Establish an innovation ecosystem** populated by digital-savvy talent and grounded by smart analytics that enables continuous adaptation to new insights, ideas and approaches.
When access to digital technologies is so easy, can every company expect to gain competitive advantage? The digital rewiring of operations can be quickly copied, after all, resulting in zero net gain in competitive advantage to each participant.
Transition from analog to digital over time

Organizations succeeding with digital are reimagining their entire business, process by process, around clearly articulated principles and integrating traditional business processes with new technologies and approaches.

Kaiser Permanente, an integrated provider of healthcare and not-for-profit health plans, for example, has established a customer engagement-focused digital strategy, with the goal of creating personalized customer experiences that foster customer loyalty. Companies choosing this approach work toward developing a seamless omnichannel customer experience and establishing a personalized customer relationship based on a deep understanding of their motivations and behaviors.
Viewing healthcare as a partnership between care providers and its members, Kaiser Permanente uses a variety of digital tools to provide low-cost access to providers and to facilitate the delivery of both preventive and curative care. To deliver on this value proposition, Kaiser Permanente is working to:

1. **Bolster patient interactions with care provider teams through digital channels.** Through a variety of channels, Kaiser Permanente offers access to medical records, remote care and secure communication between patients and care providers. In 2016, 52% of over 110 million interactions between doctors and the company’s members happened via smartphone, videoconferencing, kiosks and other tools.\(^4\)

2. **Apply analytics to identify the need for personalized medical care and the optimal method to provide it.** Kaiser Permanente uses analytics to improve patient compliance with medication and treatment programs, and to discover new ways to encourage healthy behaviors.

   An example is the company’s index tool, which it created to identify patients at risk for readmission or death within 30 days of discharge. The index comprises four parameters: length of stay, acuity, comorbidities and number of emergency department visits. A patient’s score (risk for readmission) ranges from 1 to 19, with higher scores representing a higher risk. The system pulls patient data from the emergency department to calculate the score and, ultimately, drive clinical decision support for each hospitalized patient.\(^5\)

3. **Use social media to develop patient communities with similar needs and interests.** Kaiser Permanente has designed a permissioned system that allows approved family members and other caregivers to support patients, communicate with their doctors and monitor their progress.

   The company’s digital strategy is powered by a robust foundation of operational and digital services, beginning with the company’s patient electronic health record system.\(^6\) Because the company realized the value of electronic health records early on, and invested in it as the basis for record-keeping and collaboration, the system today enables patient interactions, and powers new digital initiatives that require accurate, accessible patient data.

As a result of Kaiser Permanente’s digital customer engagement outreach, 70% of the company’s members are actively engaged in managing their health online. The company’s in-house research shows a positive correlation of this online behavior with better health, improved adherence to medication and treatment programs, and higher member satisfaction and retention.\(^7\)
Ensure digital operations support a sustainable competitive advantage

Schindler Group, a global provider of elevators, escalators and related services, pursues a digitized solutions strategy that has transformed the company’s business model by reformulating what the company actually sells. With this strategy, Schindler seeks to:

- Integrate disparate products and services into solutions.
- Complement products and services with data and expertise to solve customer problems.
- Add value through the lifecycle of products and services.

The company uses an IoT solution to collect data (e.g., temperature and speed) from sensors planted in its installed base of elevators and escalators. The sensor data — as many as 200 million-plus messages — is analyzed, and the relevant information is passed onto the company’s more than 10,000 technicians who install and maintain Schindler’s products.

Schindler’s use of the IoT, big data analytics and mobile technologies has enabled it to rewire its core operations. The sensor-generated data is processed with robust business rules and machine-learning algorithms to generate actionable insight. The solution has improved the customer experience, as the company can now preempt equipment issues, prioritize work and update maintenance schedules continuously, based on a real-time data feed. By assigning work to the nearest available technician, and equipping technicians with the right tools and spare parts, Schindler has established a competitive advantage that is tough to beat, which has translated into higher net promoter scores for the company.8
Empower a connected workforce

Schindler’s field technicians today are a connected workforce. Armed with an iPad or iPhone loaded with custom-built apps, each technician’s typical day is orchestrated by a steady flow of information, based on analysis of data streamed from sensors embedded in escalators and elevators. The app prioritizes the work, allocating it to the technician who’s geographically closest to the customer, and suggests the fastest route. If the real-time data feed from the asset in question suggests a change in priority, the app automatically reconfigures the technician’s workflow.

Based on the information provided by the asset, the app suite also reveals a list of tools and parts that will be required for repair work. Once on the job, the technician can order spare parts from a 40,000-item catalog or watch video tutorials on specific maintenance work. Schindler’s tools of field tech empowerment include:

- **FieldLink app.** This app allows technicians to get feedback about defect analysis and spare parts availability in real time. It optimizes the technician’s daily schedule by offering the most efficient routes to the assigned job location, adjusted on a real-time basis. If an elevator needs urgent repair work, the supervisor will prioritize that job via the app.

- **Schindler Remote Monitoring (SRM).** Sensors placed on all elevators and escalators continuously generate data on asset performance and inform the SRM system if a problem is detected. Intelligent diagnostics analyze the problem and communicate an action plan to the field technician through the FieldLink app.

- **The FieldWiki iOS app.** This app allows technicians to access updated documents on technical information, service instructions and safety guidelines.

- **Spare Part app.** This app offers technicians convenient online access and ordering capability to an updated inventory of spare parts. This app has generated more than $1 million in increased efficiencies in less than one year, across 250 offices in the U.S. and Canada.
Build an agile process engine

Data is the distinguishing feature of a successful digital operation. It enables analytics — both descriptive and predictive — to nudge a business into a proactive mode of operation. In a digital operations context, data is both an input and an output, resulting in a positive feedback loop, which continuously optimizes business processes. Ideally, a digital operation is instrumented around:

- **Data, streamed from a single reliable source** (e.g., transactional data, financial data, customer data).
- **A seamlessly architected end-to-end business process**, which feeds off the single source of data to process transactions.
- **A robust continuous process improvement capability** (Six Sigma and Lean) that uses this digital data stream to drive efficiency and effectiveness.

For this reason, it’s critical for organizations to have cost-effective tools that capture the necessary data, and digitize it for delivery in any format. Once the provision for data capture, storage and access is enabled, a combination of traditional and big data analytics can be applied to make meaning and optimize business operations.

Reconciliation break analysis — a business process commonly executed by a services provider — is a good example of a simple business process that can be instrumented with digital tools to deliver value to the business. At the heart of any modern reconciliation system is the need to categorize reconciliation breaks, identify their drivers and determine the nature of each break. Here are some sample steps to move this process from analog to digital:

**Expand Process Data**

Although it’s sufficient for the service provider to simply report a stock reconciliation break of, say, 50 units, this data doesn’t offer any insight to the investment manager. By providing the following information, the service provider can ensure the investment manager understands the process in detail:

- Time of breaks outstanding, and their distribution.
- Breaks distribution by custodians.
- Total value of breaks, and value by break type.
- Reconciliation break priority.
- Action taken to resolve breaks.
Organizations can further add to this list of must-have process insights, and create a needs list of critical-to-quality (CTQ) input measures. Once this is established through a business case, the stage is set for Six Sigma and Lean engineers to study the process, validate and establish the must-have CTQs.

**Execute Process Reengineering**
Around the defined CTQ measures, Six Sigma engineers can reengineer the process to ensure this process data is captured efficiently. This may include automation, within the process boundaries mandated by the organization. If the Six Sigma process study introduces the need to fix or reengineer processes upstream or downstream for optimal throughput, then that calls for end-to-end process reengineering.

**Add Digital Technologies**
Once the reengineered process delivers these data sets, the following capabilities are enabled:

- **The data can be visualized for patterns** using smart visualization tools, and further analysis can be conducted using statistical analysis tools like R, Tableau, Minitab and SPSS.

- **This data visualization and analysis can be fed into a digital dashboard**, which can be delivered to stakeholders through an app on any mobile device.

In our view, business process service providers with deep expertise in business processes, Six Sigma and Lean can play a critical role in instrumenting an analog business process to a digital one.
Reimagining Digital Content Services

We worked with a leading global K-12 publisher to accelerate its push toward digital content creation and distribution, using a modern digital platform. The publisher’s existing content operating model was distributed in silos globally, leading to long print cycles of 18 to 24 months.

With increased competition from digitally-savvy players, the company’s operations team couldn’t keep pace with user demand for fresh content. Content reuse through multiple delivery platforms — print, web and mobile — was seen as a way to satisfy customers while reducing time to market.

Meanwhile, the company needed to manage a global vendor network of 170 content producers, adding to the stress on operations and business competitiveness. With content stored across 170 systems, it was difficult to derive optimal value from these assets through content reuse, and the organization was unable to take advantage of a greater collaborative opportunity to create content through enhanced workflows.

By applying our observations of industry trends and a deep understanding of the business, we developed a solution premised on the following digital principles to produce and manage content:

- Content is currency, and must be managed like treasury operations.
- Exemplary customer experience is a non-negotiable prerequisite.
- Personalization is a must-have.
- Digitally-instrumented content operations can, and must, impact revenues.
We assessed the current state of the content supply chain, baselined the company’s global content operations capability, defined the end-state target operating model and ensured stakeholder approval. The target operating model was defined based on simultaneous delivery of multilingual experiences across channels, geography and platforms, as well as growth in existing and new markets globally.

With these guiding principles and business goals, our solution was predicated on:

- Vendor consolidation.
- A unified, straight-through workflow platform.
- A digitally instrumented global content operating model.
- A “content garage” for learner-centered design and innovation.

By enabling the client to access the distributed content across its supply chain through a centrally accessible system, the solution reduced content spend by 50%, cut publishing cycle time by 50%, and moved the organization toward a learner-centric digitized model for students. The solution also helped the organization monetize content for additional revenue streams.
Build a digital foundry

Building a digital foundry is the first critical prerequisite for fostering an ecosystem in which a thousand apps can bloom. In our experience, the digital foundry must include:

1. **Technology capability**: Being digital isn’t just about assembling a potpourri of custom-built applications. It also involves a carefully planned and instrumented array of technologies and models, including social, mobile, analytics, cloud, the IoT and artificial intelligence (AI). To accommodate this ever-expanding suite of technology applications, companies need a robust IT backbone that is agile, resilient and flexible.

2. **Business process redesign and design-thinking capability**: Design for Six Sigma (DFSS) and design thinking principles provide a structured methodology for redesigning new systems and processes. DFSS is a customer-centric design approach with a repeatable methodology that fosters creative process design. DFSS is the most appropriate toolkit to use when:
   1. The business needs to replace, not repair, a system or process.
   2. Improving the existing process will not meet the business’s needs.
   3. The business is offering an entirely new product or service.

Design thinking tackles complex problems by:

1. **Empathizing**: Understanding the human needs involved.
2. **Defining**: Reframing and defining the problem in human-centric ways.
3. **Ideating**: Creating many ideas in ideation sessions.
4. **Prototyping**: Adopting a hands-on approach in prototyping.
5. **Testing**: Developing a prototype/solution to the problem.
A digital foundry enables businesses to continuously seek opportunities to expand the digital footprint, enhance systems and enrich customer interactions. By partnering with business process service providers that have a proven DFSS and design thinking capability, businesses can build a formidable digital foundation and spur the development of next-generation digital-enabled business processes and platforms. Given the specialized nature of the skills and the time needed to scale up these capabilities, companies will be better served to partner with specialist service providers to catalyze their digital agenda.

Looking ahead: adopting a digital operations code

As the future unfolds, it’s critical to understand that creating robust digital operations requires seamlessly integrating relevant technologies with business processes to forge sustainable competitive advantage. This requires adopting a new code of engagement between businesses and service providers. In our view, there are seven key components to a high-performance approach to digital operations and business services:

- **A well-defined customer-focused digital strategy** that advances the business’s value proposition. Well-designed digital operations ensure robust and reliable delivery of that value proposition. Digital leaders have successfully reinvented themselves by placing customers at the center of the process redesign. They have used human-centric design and customer insight to empathetically connect with customers and deliver positive experiences.

- **A secure and a reliable platform**, automated with the latest robotic process automation (RPA) and intelligent process automation (IPA) technologies, enabling transactions efficiently.

- **Use of mobile and analytics technologies to deliver insights to stakeholders**, enabling the business to continuously improve business outcomes.

- **A digitally empowered, skilled and connected workforce**, with real-time access to data, insights and expertise, and an unrelenting focus on delighting customers at every touchpoint.

- **A new set of digital-age metrics** that go beyond traditional output measures of process efficiency and effectiveness. With digital technologies, it’s possible to gain insight into metrics that gauge the customer experience, such as percent of self-service, percent of same customer-same issues, percent of quotes to converted sales, accuracy of content classification to improve machine-learning algorithms, etc.

- **A shared digital culture** that fosters a collaborative environment that embraces change and the right behaviors to drive joint outcomes and success.

- **All of the above must be supported by a flexible customer engagement model**, with the strategic ability to anticipate and respond to rapidly changing business needs.
Endnotes


About the author

Anand Chandramouli
Practice Leader, Cognizant Digital Operations Communications and Media

Anand Chandramouli is the Practice Leader for the Cognizant Digital Operations Communications and Media business. He has 20 years of experience across Six Sigma consulting, program management, operations and research. Anand is focused on how the interplay of digital technology and other forces shape businesses. He can be reached at Anand.Chandramouli@cognizant.com.

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Digital Operations

Cognizant Digital Operations helps clients re-engineer, digitize, manage and operate their most essential business processes, lowering operating costs, improving user experiences, and delivering better outcomes and topline growth. Across the practice, we are creating automated, data-driven platforms and industry utilities. We help clients run better by applying traditional optimization levers, and we help them run differently by creating competitive advantage through making their processes digital-ready, which often leads to more effective operating models and corresponding topline revenue growth. Visit us at cognizant.com/cognizant-digital-operations.

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