ISG Research™

The ISG Digital Capability Model—Finding Value along the Digital

Transformation Journey

Digital business is not just about automation and e-commerce. Digital business is about embracing disruptive combinations of technologies to create new levels of business and societal value. Various combinations of mobile, cloud, data from internet of things (IoT) sensors, instantaneous analysis, and blockchain, for example, create context-aware experiences that individuals and businesses can monetize in ways that have not been possible before.

For companies in which retail customer experience is not the main deliverable, it can be difficult to know how to invest in the digital journey. According to ISG data, an enterprise with a formal digital business strategy competency center drives more than a two-thirds higher rate of revenue generation than an organization that is not focusing on new business models. Overall, enterprises are struggling to understand where to invest and what decisions they need to make to avoid falling behind the competition.

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THE ISG DIGITAL CAPABILITY MODEL—FINDING VALUE ALONG THE DIGITAL TRANSFORMATION JOURNEY

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SUMMARY & KEY INSIGHT

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PERSPECTIVE

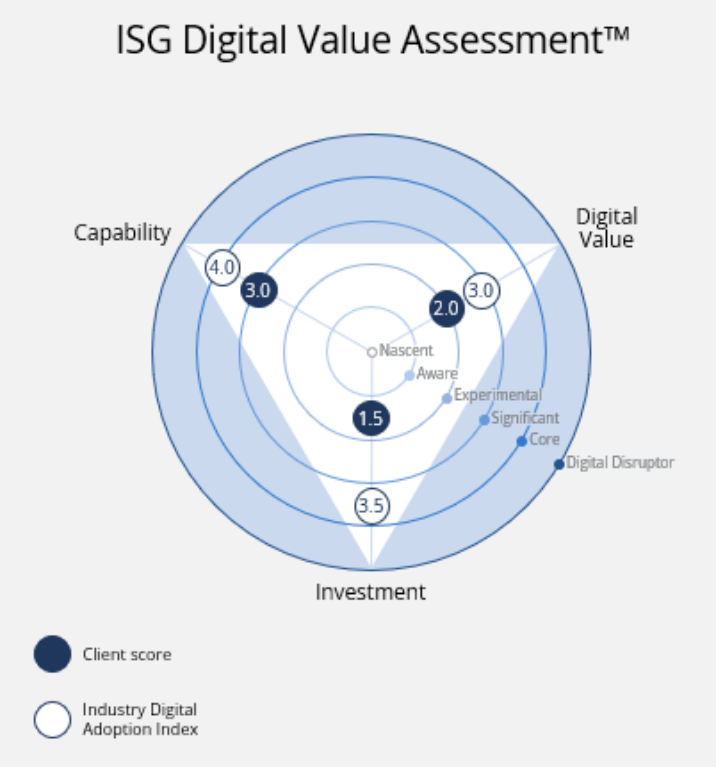
The answers for how and where to invest in digital are just emerging from leading-edge companies. To take advantage of the opportunities in the market, enterprise business leaders must first answer three key questions:

1. Is my organization recognizing the expected value and returns from digital transformation?

2. Is my organization investing in digital at the right levels and in the right capabilities?

3. Is my organization adopting and scaling the right digital capabilities at the right pace?

Figure 1. The ISG Digital Value Assessment



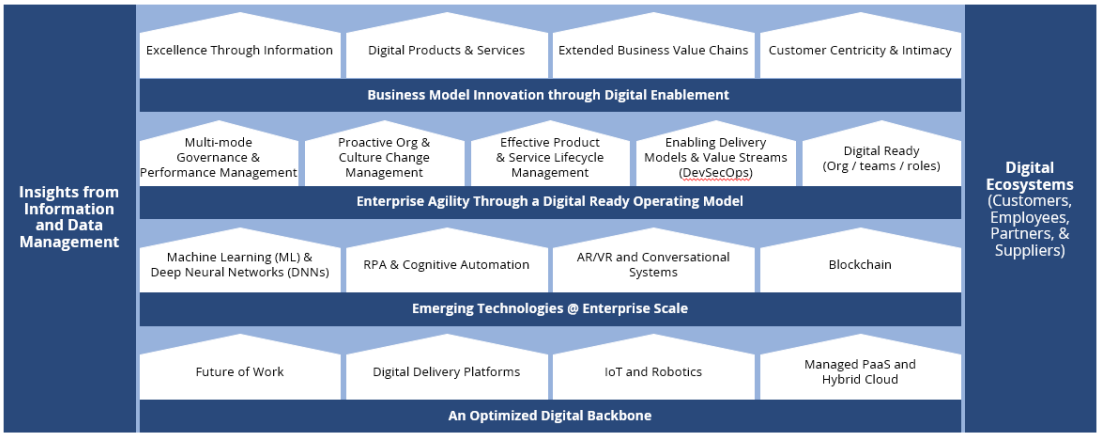
Source: ISG

The ISG Digital Value Assessment depicted in Figure 1 above is built using data from more than 500 large enterprises. The ISG Digital Value Assessment correlates this data with investment and value realization metrics to help enterprise clients compare their digital business transformation against other leading organizations, answer the key questions above, and serve as a foundation for building a digital business strategy.

In concert with investment and value realization metrics, the assessment leverages the unique, industry-leading ISG Digital Capability Model (see Figure 2), which is organized into six domains describing the class of technologies and business processes found in digital-savvy businesses.

ISG observes that enterprises generally are implementing a few solutions from each domain of the ISG Digital Capability Model. This data allows ISG client enterprises to benchmark their current digital capabilities against hundreds of organizations already on the digital journey – organizations that have implemented transformative capabilities and are seeing increased productivity, reduced cost and new revenue streams. Tracking progress in this way leads to competitive advantage and strategic insights unavailable to most organizations. Measuring the value of digital investments guides decision-making at all levels of the digital enterprise.

Figure 2. The ISG Digital Capability Model



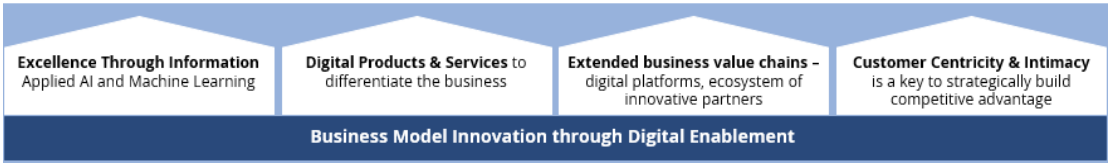
Source: ISG

Six Digital Domains

As enterprises chart a digital strategy and begin executing on that strategy, they will participate in the larger digital transformation of their respective industries and vertical markets. Successful digital businesses create value through most if not all digital domains described in the ISG Digital Capability Model. Each digital domain of the ISG Digital Capability Model above describes the class of technologies and business processes that are found in digital-savvy businesses. Competency in all six domains provides the highest degree of digital capability.

1. **Business Model Innovation** generates new revenue streams and allows enterprises to be relevant and competitive in the digital economy. Capabilities such as cloud-based data analytics, collaboration, agile development, IoT and context-aware mobile applications create opportunity to monetize both business-to-customer (B2C) experiences and business-to-business (B2B) operational ecosystems. Figure 3 below depicts the four competency areas which will help companies spur business model innovation.

Figure 3. Business Model Innovation through Digital Enablement



Source: ISG

As an example of creating a new business model, Carnival Cruise Line redesigned the passenger experience from ship-onboarding activities through the end of the cruise with a digitally enabled passenger medallion and IoT sensors deployed throughout the ship. The new experience drives revenue, profitability and a higher percentage of repeat customers.

Key questions that ISG Insights research will answer for enterprises developing new business models include:

- What is the role of data in creating new business models?
- How do enterprises stuck with legacy technology enable their businesses and compete with new business models?
- How can a business carry over a customer-centric business model into B2B industries?
- How can a company build and mine an ecosystem of customers and partners for business value?

2. **Enterprise Agility.** The urgency for organizations to adopt and realize value from digital technologies is creating a race to differentiate in all industries and in all regions of the world. But adapting to change is more than adopting new technologies. True agility—the ability to adapt to rapid change—is needed in traditional disciplines as well. ISG researchers have identified five areas within the Enterprise Agility domain (see Figure 4 below) in which enterprises must become competent: multi-mode governance, culture and change management, product and service lifecycle management, enabling delivery models through DevOps and establishing digital-ready teams and roles and organizations.

Figure 4. Enterprise Agility through Digital-Ready Operating Model

Source: ISG

Recent ISG Insights research reveals that 59 percent of organizations using agile development processes move faster using smaller batches of work, enabling them to reduce risk, release features faster and avoid workarounds. Research findings also reveal that, as organizations mature their agile practices, they tend to incorporate customer and business metrics into their development process to a greater degree, thus scaling agile practices across teams and cultures. ISG research further shows that

adoption of agile practices is further strengthened in enterprises if lean and agile methods are brought to financial areas like budgeting and performance management—thus unlocking the door for management to respond quickly to changing market conditions.

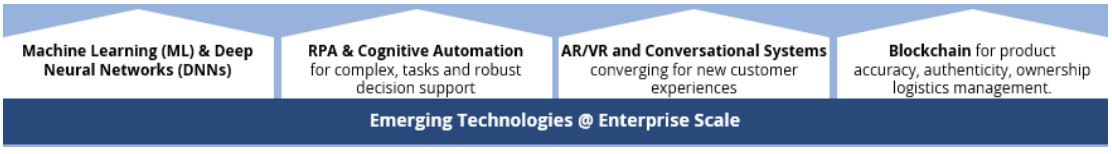
Perhaps the most revealing data point about the value of agile processes, is that organizations that started agile methods three or more years ago are twice as likely to be working on digital technologies and products.

Key questions ISG Insights research will answer for organizations working to increase their enterprise agility include:

- What are the most common business outcomes of scaling agile and DevOps across the enterprise?
- How will the agile culture enable digital value?
- What industries and vertical markets see the greatest benefit from agile methodologies?
- What are the most common metrics used to measure the performance and business value of agile and DevOps methodologies?

3. **Emerging Technologies @ Enterprise Scale** refers to the class of ever-changing technologies that harness the flexibility and power of context-aware computing. What makes an emerging technology a digital technology? A digital technology is one that integrates with other technologies to provide new ways to get work done and monetize value for an organization. While effectively limitless as a category, emerging technologies that have the most potential to impact business include machine learning (ML) and deep neural networks, robotic process and cognitive automation, augmented/virtual reality (AR/VR) and conversational systems and blockchain. (See Figure 5.)

Figure 5. Emerging Technologies @ Enterprise Scale



Source: ISG

One example of blockchain's evolution and broad application beyond digital currency is the Ethereum-based public blockchain, which enables the execution of peer-to-peer contracts. Another example is authenticity tracking, which makes available an unbroken chain of evidence based on numbers, codes, readable tags and even photographic

evidence from an item's manufacturer or provider, through distributors and third parties, to the purchaser or end user. The process can record all steps in an item's supply chain from origin to end user. Such distributed ledger approaches are infinitely scalable and increasingly being used by organizations involved in aircraft and vehicle maintenance and inventory supply and control.

Artificial intelligence (AI) and ML drive enterprise-wide efficiencies by learning repetitive tasks and optimizing patterns. While reducing costs through eliminating repetitive tasks is currently the most common value derived from AI/ML, ML algorithms are also used to detect data patterns that can drive sales and create new user experiences.

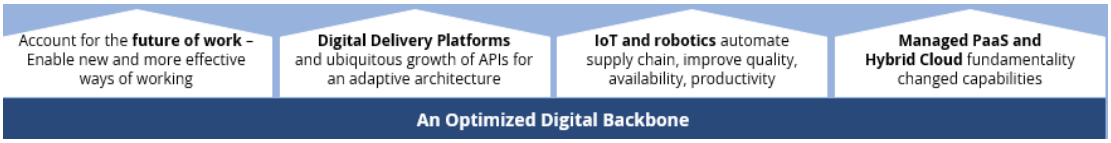
Key questions that ISG Insights research will answer for enterprises hoping to leverage emerging technologies include:

- How can enterprises assimilate new technologies fast enough to be competitive in their industry?
- Which suppliers and service providers offer the most agile and effective platforms for developing AI, cognitive or blockchain-enabled applications?
- Which emerging technologies can help monetize vast stores of data now available through IoT sensors?
- How will midsize and small enterprises be able to compete with large enterprises using emerging technologies at scale?

4. **Digital Backbone** describes the cloud and infrastructure technologies common to almost all digital business initiatives and serves as the foundation upon which companies can monetize new business designs. While cloud computing is a common way to outsource the hosting of applications and storage, many advanced ISG clients have created two modes of technology adoption—first, they systematically migrate legacy applications to the cloud, and, secondly, they develop cloud-native applications for public and/or hybrid-cloud platforms. But cloud-native applications are not all created equally—and the associated cloud application development environments are critical. For example, Amazon Web Services and Microsoft Azure have a vast array of application development and database tools that drive adoption of the cloud platform. Using these and other tools, native-cloud applications are specifically designed to drive massive scale such as real-time data analysis from IoT sensors. Business outcomes from architecting applications in the cloud include new revenue streams, partner/customer-driven ecosystems and improved agility that allows a company to change product and revenue strategies to respond to changing markets.

ISG analysts have identified four competencies that make up a digital backbone (see Figure 6): collaboration in the digital workplace, digital delivery platforms through APIs, IoT and robotics, and managed platform-as-a-service (PaaS) with hybrid cloud.

Figure 6. An Optimized Digital Backbone



Source: ISG

Key questions ISG Insights research will answer for enterprises building a digital backbone include:

- What cloud development and delivery platforms will drive the best digital business opportunities?
- How can enterprises develop and maintain IoT and its massive data analysis requirements on today's cloud platforms?
- How will cloud technologies influence the workplace of the future?
- What role will managed service providers play in managing and innovating cloud development and delivery environments?

5. **Data & Insights.** Big data is the lifeblood of digital transformation, and leading enterprises are building data and analytical capabilities that span all other digital domains: Digital Backbone, Emerging Technologies @ Scale, Enterprise Agility and Business Model Innovation. For sustainable digital transformation to take place, organizations must develop expertise through the entire data lifecycle, which includes data storage (including data lakes and data marts), data streaming, data exploration and statistical analysis. Organizations can derive value throughout the data lifecycle by reducing costs through efficiencies and gaining insights that drive new revenue.

Transactional data from systems of record (e.g., financial and customer information systems) are most available to IT organizations that own the systems, but technology teams that partner with business leaders can access operational data in planes, manufacturing plants and pipelines—anywhere data-driven innovation can extract value for the business.

In terms of market solutions, major application providers such as Microsoft, SAP, Oracle and Salesforce are delivering application platforms with built-in analytics engines. As a result, many service providers have developed new frameworks and tools that integrate

and orchestrate different software elements to facilitate a full-fledged data-driven transformation. For example, service providers are helping telecommunications companies optimize their use of customer transactional data to provide location-based marketing services and utility companies optimize their use of operational data through smart meters to model and plan for household energy consumption and load optimization. Leading organizations also are experimenting with ML, AI, and AR/VR, all of which require deep data expertise.

Key questions ISG Insights research will investigate for companies seeking to improve their data and insights competency include:

- What are the key components of data and analytics platforms that are leading to new business models and revenue streams?
- How is an enterprise's digital backbone limiting or enabling new analytics capabilities?
- What is the role of AI and ML in realizing business value from data?

6. **Digital Ecosystems.** Perhaps the most powerful of all digital technologies or processes is the scalable and lucrative combination of cloud, applications and data combined into an economic system(s). This is the digital ecosystem. Well-known consumer-focused platform ecosystems include Uber and Lyft in ride sharing, Amazon and eBay in digital commerce. Social collaboration sites liked LinkedIn, now offer various ways businesses interact with individual professionals and entire communities. The LinkedIn ecosystem includes individual networking, sales tools, career training, and advertising--each with its own revenue opportunities and communities.

Another example is a German university that built a commercially available smart logistics grid solution, using composite clouds as a common platform with which companies can apply predictive analytics to both public and private data. This solution can be used to connect a plant, a parts manufacturer, and a trucking company transporting the parts to the assembly plant. Each entity benefits from real-time information. The shared data includes publicly available information – like current traffic jams, weather warnings, detours on the Autobahn – and each entity uses this information along with its own private data to optimize its operations.

Key questions ISG Insights research will answer for enterprises building a digital ecosystem include:

- How will ecosystems drive legacy enterprises to embrace new models of collaboration with customers and partners?

- What are the critical success factors for starting up or operating within a digital business ecosystem?
- What are some examples of digital ecosystems within vertical industries like banking, finance, manufacturing or utilities?

IMPACT AND GUIDANCE

ISG research finds that 95 percent of organizations that have implemented the digital capabilities described in this model are driving greater revenues, business growth and/or substantial operational efficiencies. The ISG Digital Value Assessment helps enterprises identify the specific digital capabilities they need to achieve the desired business results. It's not a matter of if data and digital transformation will disrupt value chains. It's a matter of when. Enterprises that want to make progress along the journey toward digital transformation must measure progress based on real, quantitative and comparative data from leading organizations that have already undertaken parts of the journey – and learn from their outcomes.

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