MIT CISR Mission

Founded in 1974 and grounded in the MIT tradition of rigorous field-based research, MIT CISR helps executives meet the challenge of leading dynamic, global, and information-intensive organizations.

We provide the CIO and other digital leaders with insights on topics such as operating models, innovation, and governance. Through research, workshops, and events, the Center stimulates interaction among scholars and practitioners. More than 90 firms sponsor our work and participate in our consortium.

Our 2020 research agenda includes the projects listed below:

Digital Enterprise

- Re-Platforming Your Enterprise
- Data Sharing Across Company Boundaries
- Defining Digital Operating Models
- Ecosystems, Circa 2025
- Scaling and Systematizing New Business Models

Digital Work

- Breaking Down Barriers to Pervasive AI Adoption and Use
- Digitizing Work to Work Digitally
- WHAT vs. HOW: Governance for Aligned Autonomy

Digital Value

- Building Data Monetization Strategies That Pay Off
- How Much Does IT Really Cost?
- Value Creation and Value Capture in Digital Models

Peter Weill is the chairman of MIT CISR and is supported by Dorothea Gray. Leslie Owens is MIT CISR's executive director; Drs. Kristine Dery, Nils Fonstad, Jeanne W. Ross, Ina Sebastian, Nick van der Meulen, Barbara Wixom, and Stephanie Woerner are research scientists. Chris Foglia, Cheryl Miller, Aman Shah and Amber Franey manage the center's events, communications and operations. MIT CISR is funded by Research Patrons and Sponsors.

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Digital Enterprise

Re-Platforming Your Enterprise

Successfully transforming your enterprise typically involves moving to a digitized platform—re-platforming your enterprise—and then exploiting that platform to create value. By reviewing case studies and engaging in recent exploratory discussions with leading CIOs and COOs, we have identified four strategies for re-platforming to accelerate transformation. The strategies are 1) adding APIs that connect legacy systems to digital channels/customer offers; 2) replacing only selected parts of your legacy systems; 3) creating a parallel technology platform/business model to make customers offers and migrating to it; and 4) replacing legacy systems with a modern flexible core platform, taking several years and costing many millions of dollars. This year we will explore:

- How do these four strategies differ in terms of what is needed to do each one successfully?

- Are some approaches to re-platforming superior for all types of transformation or better for specific type of transformation (e.g., customer experience first)?

- Are there differences in resources, capabilities, and business performance outcomes for each re-platforming strategy?

We will use survey data to address these questions, and interviews to create vignettes that highlight important aspects of each re-platforming strategy, and we will augment findings with great diagrams of platforms.

Seeking: Platform diagrams and interviews with companies that are replacing their platforms.

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Data Sharing Across Company Boundaries

In the 2019 CISR exploration research on data sharing, we identified two data sharing archetypes in the digital era: Control and Collaboration. The Collaboration archetype is becoming increasingly important as companies seek to grow with the help of partners.

Collaborative data sharing is an emergent and turbulent space. Should an aircraft OEM share data with airlines to co-create solutions rather than selling packaged data? Should health systems share patient data with Google in pursuit of better patient care? Companies have to achieve situational clarity on risk and value of collaborative data sharing in an environment where data, data use, and regulations are rapidly changing.

In 2020, we will focus on the following research question: What are the key considerations for companies that want to engage in collaborative data sharing?

Methodology: Based on our 2019 interviews, we will conduct two case studies (or more than two shorter case vignettes) that illustrate collaborative data sharing, the implications for partnering, and key outcomes from the sharing arrangements. We plan to select contrasting case contexts.

Seeking: Companies that are successful at collaborative data sharing.

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Defining Digital Operating Models

For years, MIT CISR research on enterprise architecture argued for establishing a high-level operating model that defined the integration and standardization requirements of the company's core business processes. For purposes of supporting established business models, this operating model concept can still be extremely useful. But the introduction of digital offerings requires that companies simultaneously design requirements for delivering digital offerings. Digital offerings are new sources of revenue that introduce new customer value propositions—and new business models. The enterprise architecture supporting a company's digital business models is more focused on speed and agility than efficiency. Thus, we need a new approach to articulating the operating model.

This research will examine in-depth the digital operating models of three established companies that have made good progress in developing and delivering digital offerings. We will explore the high level definition of enterprise architecture for these companies' digital businesses with the intention of identifying the key dimensions of a digital operating model.

Methodology: 3–4 in-depth case studies

Research Team: Jeanne Ross (lead), Cynthia Beath, John Mooney, Ryan Nelson

Ecosystems, Circa 2025

MIT CISR began studying digital ecosystems in 2012 and much has changed since. A digital ecosystem is created when companies partner to provide customers more value, working together via digital connections, and providing a single go-to destination for customers.

It's time to take stock of the impact of digital ecosystems, first in 2020, and then make predictions for 2025. What we know so far is that ecosystem drivers are "a winner takes most" strategy, succeeding by providing an attractive go-to destination for many of the customers' needs which helps them dominate the relationships with customers and partners. Successful Ecosystem Drivers push other players in the industry to be Suppliers or Modular Producers to the ecosystem (consider how Amazon, WeChat and Facebook work). They exploit the ecosystem data they've collected, which no other player sees in its entirety.

- What percentage of enterprise revenues comes from either driving an ecosystem or participating in someone else's ecosystem?

- What are the dominant domains that ecosystems operate in, such as mobility, wellness, procurement, energy management, compliance and home ownership?

- How will ecosystems evolve leading into 2025?

- We will use survey data from over 1000 companies and interviews on ecosystem creation and participation.

Seeking: Two or three case studies of how an ecosystem driver has grown rapidly by using the data collected to dominate a domain.

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Scaling and Systematizing New Business Models

Recent MIT CISR research found that top performing firms spend at least ten percent of their total innovation investment on new business models, defined as efforts to generate new sources of revenue by addressing new types of customer needs (e.g., a car manufacturer trying to develop profitable mobility services for people who may not ever own a car).

Firms traditionally face many challenges in creating and scaling profitable new business models. And even more challenging is to systematically develop multiple successful new business models.

We will begin this research by conducting an in-depth case study on a firm that has developed multiple successful new business models, and supplement that with data from multiple successful new business model efforts from other firms, to address the following questions:

- How are firms designing themselves for digitally-enabled business model innovation?

- What are common challenges faced by large, traditional companies in scaling individual new business models, in terms of both reach and range, and what critical success factors help to overcome them?

- How do large companies systematize the development of new digitally-enabled business models?

Seeking: Teams of executives with experience in scaling and systematizing multiple successful new business models within a large company, such as Product Owners and Heads of Innovation.

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Digital Work

Breaking Down Barriers to Pervasive AI Adoption and Use

AI is high on executives' agendas. It potentially can generate big value; yet, if not appropriately designed, built, deployed, and nurtured, AI can fall short and, worst case, cause harm. This research will explore how companies can maximize value from AI, and we will focus on understanding emergent AI challenges, such as building algorithmic trust, avoiding decision risk, and developing new roles. Ultimately, we intend to help executives mitigate AI deployment risks and achieve the desired payback from AI investments.

- What activities and strategies improve chances of AI trust and acceptance by organizational and other key stakeholders?

- What activities and strategies help companies achieve more pervasive AI deployment and use?

Seeking: Interviews with AI project team members—two people per team (one representing an algorithm expert, and the other representing a business/domain expert).

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Digitizing Work to Work Digitally

The digital economy has highlighted the role of data and technology in improving the customer experience, but a great customer experience depends on dedicated, productive employees. Digital technologies not only enable us to eliminate work that is not value-adding (the junk), but also to re-design work to unlock value for employees (and therefore customers) in new ways. In previous interviews with CIOs, CDOs and CXOs we found that companies are breaking knowledge work processes into components, many of which are then capable of being digitized. In this way work components become visible, can be easily shared, and are able to be linked and re-organized in ways that were never possible before. We identified three capabilities that enable companies to start to design knowledge work in this way: 1) digitizing of work to make it visible and sharable (e.g., platforms that automate repetitive work and provide better information to decision makers); 2) ways of organizing collaborative teams to search and share re-usable components to inspire new work designs (e.g., Agile teams, Journey Mapping, Communities of Practice); and 3) building a common understanding of what it means to work in a way that is fit for a digital enterprise (e.g., more evidence-based, mobile, cloud-based, personalized).

In 2020 we will explore these findings further to get new insights into how high performing firms are building these capabilities. Specifically, we will pursue the following research questions:

- Who should lead this digitization of work effort?

- What are the typical goals or metrics of progress used in these types of efforts?

Seeking: Companies that are proactively digitizing work beyond automation for increased efficiency, and considering how work components can be shared, linked, and re-grouped to transform how work is done.

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WHAT vs. HOW: Governance for Aligned Autonomy

Companies are increasingly depending on empowered teams to deal with the accelerated pace of the digital era, yet leaders are finding that this new way of organizing is challenging in terms of coordination and end-to-end integration of company offerings. This year, we will investigate the effectiveness of governance mechanisms that redefine authority and accountability to ensure coherent decision making in complex organizational contexts. The research will consist of a survey of senior executives and case studies of companies that pursue empowerment as an enterprise-wide reality.

Research questions include:

- How can companies foster an environment in which teams successfully distribute ownership of key decisions?

- What governance mechanisms work to enhance organizational alignment while minimally limiting team autonomy?

- What are effective resource allocation mechanisms (particularly in terms of funding and expertise) to support empowered teams?

Seeking: Survey respondents and interviewees from companies that are working to successfully align the efforts of their empowered teams.

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Digital Value

Building Data Monetization Strategies that Pay Off

CISR research identified five data monetization capabilities that enable top monetization returns. This year, we will explore how companies should use these capabilities to create lucrative data monetization strategies. We will investigate different combinations of improving, wrapping, and selling monetization activities—and their association with important outcomes, such as overall monetization returns and company financial performance.

- What are the implications of investing in one of a set of common data monetization strategies?

- What are the implications of moving to a different data monetization strategy? What does the shift require—and what returns should executives expect?

Seeking: Data collection for this study is complete at this time.

Research team: Barbara Wixom (lead), Killian Farrell
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How Much Does IT Really Cost?

Over the last two decades, spending on IT, and now digital, has risen significantly. There is a growing concern from investors, boards, top management teams, and IT leaders that we understand the costs of digital transformation and the benefits achieved. In short, how much is digital costing and is it paying off?

In this research, we begin to answer this question, starting with the fundamental query of 'What does IT cost?' We will use data from over 1000 companies to understand how much they are spending on digital for various transformation goals such as improving the customer experience, re-platforming, increasing operational efficiency, launching a new business model, improving the employee experience, etc. We will create IT portfolios for top performers categorized by industry and by transformation goal. The objective is to help companies begin assessing spending against best performers to see how they are doing. Are you spending too much, too little or about the same as top performers for each transformation goal?

The next step is to look at returns from these investments and the best practices for organizational change required to convert the spending into bottom-line impact. We will illustrate common spending patterns and best practices with case studies.

Seeking: Companies willing to share their digital/IT spending allocation by each major transformation goal we are studying with the potential to become a case study.

Research team: Peter Weill (lead), Stephanie Woerner, Aman Shah
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Value Creation and Value Capture in Digital Models

Companies with effective digital partnering grow significantly faster than their industry average. Our analysis from the 2019 MIT CISR survey, however, shows that the average company is only moderately successful in creating value for their customers with partners and less effective in capturing that value in terms of tangible results like revenue growth. In 2020, we will examine successful strategies for both creating and capturing value in digital partnering and digital models in general. Our research questions are:

- How do companies successfully create value and then capture the value in digital partnering by increasing reach, range, and both?

- What are the key capabilities for first creating and then capturing value?

- How do successful value creation and value capture differ based on business models and progress in digital transformation?

- What is the role of the CIO in driving value creation and value capture in digital models?

Methodology: Survey analysis and interviews for case vignettes.

Seeking: Companies that are successful at creating and capturing value with partners and in different business models.

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