

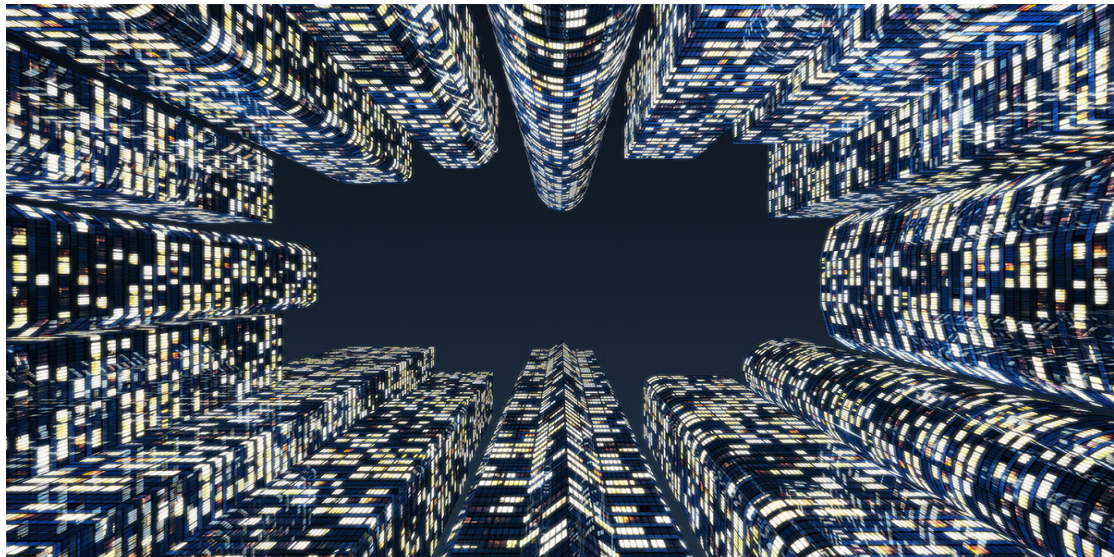
Harvard Business Review

Digital Transformation Changes How Companies Create Value

by

- [Marshall W. Van Alstyne](#)
and
- [Geoffrey G. Parker](#)

December 17, 2021



Jorg Greuel/Getty Images

Summary.

Digital transformation is about changing where value is created, and how your business model is structured. More and more, value creation comes from outside the firm not inside, and from external partners rather than internal employees. The authors call this new production model an “inverted firm,” a change in organizational structure that affects not only the technology but also the managerial governance that attends it. Executives must understand and undertake partner relationship management, partner data management, partner product management, platform governance, and platform strategy. They must learn how to motivate people they don’t know to share ideas they don’t have.

Since at least the 1980s, firms have engaged in digital transformations by coordinating, automating, and outsourcing productive activity. Client server

architectures replaced mainframes, remaking supply chains and fostering decentralization. Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) systems automated back office and front office processes. Shifts to cloud and SaaS have changed software evolution and the economics of renting versus owning. Machine learning and artificial intelligence uncover patterns that drive new products and services. During the Covid-19 pandemic, virtual interactions replaced physical interactions out of sheer necessity.

Some of these changes were as straightforward as converting processes from analog to digital. In other cases, companies changed how they worked or what they did.

Yet, amidst all this transformation, something novel — and perhaps fundamental — has changed: where and how companies create value has shifted. More and more, value creation comes from outside the firm not inside, and from external partners rather than internal employees. We call this new production model an “inverted firm,” a change in organizational structure that affects not only the technology but also the managerial governance that attends it.

The most obvious examples of this trend are the platform firms Google, Apple, Facebook, Amazon, and Microsoft. They have managed to achieve scale economies in revenues per employee that would put the hyperscalers of the 19th and early 20th centuries to shame. Facebook and Google do not author the posts or web pages they deliver. Apple, Microsoft, and Google do not write the vast majority of apps in their ecosystems. Alibaba and Amazon never purchase or make an even vaster number of the items they sell. Smaller firms, modeled on platforms, show this same pattern. Sampling from the Forbes Global 2000, platform firms compared to industry controls had much higher market values (\$21,726 M vs. \$8,243 M), much higher margins (21% vs. 12%), but only half the employees (9,872 vs. 19,000).

In the past, high revenues per employee gave evidence of highly automated or capital intensive operations such as refining, oil exploration, and chip making. Indeed, automation allowed Vodafone to reduce headcount for managing 3 million invoices per year from over 1,000 fulltime employees to only 400. But this time transformation is different. Inverted firms are achieving far higher market capitalization per employee not by automating or by shifting labor to capital but by coordinating external value creation.

The highest value digital transformation comes from firm inversion, that is, moving from value the firm alone creates to value it helps orchestrate. Cultivating a

successful platform means providing the tools and the market to help partners grow. By contrast, incumbents typically use digital transformation to improve the efficiency of their current operations. New revenue projections typically focus on value capture. Of course, digital transformation can and should support operating efficiency, and this often comes first, but it cannot stop there. Digital investments must set the firm up to partner with users, developers, and merchants, at scale, with a focus on value creation, which is the foundation of firm inversion. Unconstrained by the resources the firm alone controls, inverted firms harness and orchestrate resources that others control.

How Inverted Firms Create Value

The most compelling evidence in favor of digital transformation as firm inversion comes from a recent study of 179 firms that adopted application programming interfaces (APIs). As interface technology, APIs allow firms to modularize their systems to facilitate replacement and upgrades. APIs also serve as “permissioning” technology that grants outsiders carefully metered access to internal resources. These functions not only allow a firm to quickly reconfigure systems in response to problems and opportunities but also allow outsiders to build on top of the firm’s digital real estate. Researchers (including one of the authors) classified firms based on whether API adopters used them for internal capital adjustment, the upgrades and opportunities the firm pursued itself, or used APIs for externally facing platform business models that allow developers and other partners to create their own upgrades and opportunities.

The difference in results between these two approaches is striking. Measured in terms of increased market capitalization, gains for firms that took the internal efficiency route were inconclusive. By contrast, firms that took the external platform route, becoming inverted firms, grew an average of 38% over sixteen years. Digital transformation of the latter type drove huge increases in value.

Inverted firms rely heavily on engagement from their external contributors. This strategy relies on partners the firm does not know volunteering ideas the firm does not have — a very different process than outsourcing, where the firm knows what it wants and contracts with the best known supplier. For firm inversion to work, others must join the ecosystem, otherwise it’s about as useful as hosting a potluck where nobody comes. Good management is what gets you RSVPs and guests creating good things to share. How new guests are rewarded, what resources they are given, and the willingness of the firm to help create that value can determine whether previously unknown partners choose to add value. This requires a different

managerial mindset, from controlling to enabling, and from capturing to rewarding. The more that a firm can coax partners to volunteer investments, ideas, and effort, the more this external ecosystem thrives.

To attract partners, these inverted firms follow one simple rule: “Create more value than you take.” A little reflection shows the rule’s potency. People happily volunteer investments in time, ideas, resources, and market expansion when they get value in return. Partners flock to a firm that makes them more valuable, which in turn helps the firm’s ecosystem flourish. By contrast, a firm that takes more value than it creates drives people away. Why should they cook in a kitchen where the head chef keeps all the sales or build on digital real estate where the landlord takes all the rent? Such ecosystems wither.

Good platform husbandry means taking no more than 30% of the value and it can be far less. Too many product firms start from the bad habit of asking “How do we make money” when instead they should start by asking “How do we create value?” and “How do we help *others* create value?” Only by creating value is one entitled to make money.

The New Rules of Creating Value

Firm value used to be tied to tangible assets but that is no longer the case. IP valuation firm Oceantomo has documented a 30 year trend of shifting firm values from tangible to intangible assets. As of their 2020 accounting, intangible assets made up 90% of the valuation of S&P 500 firms. Of course, intangible assets cover a broad range of things including the value of brand, intellectual property, and goodwill. Those assets, however, have been known long before the 1980s.

Among inverted firms, the network effects that arise when partners create value for one another are a major source of growth in intangible assets. Adding the ability to coordinate value creation and exchange — from user to user, partner to partner, and partner to user — is one way that traditional firms transform. It also provides means to scale. Transforming atoms to bits improves margins and reach. Transforming from inside to outside magnifies ideas and resources.

To be sure, firm inversion entails risks of outside interference and partner negligence. If partners are part of the value proposition, then a brand can suffer when that proposition fails. One coauthor’s family member rented a host’s home on Airbnb only to discover it had no shower or bathroom, a fact carefully omitted from the service description. Airbnb quickly stepped in to discipline the host and provide the renter

with a nicer no cost accommodation. Relying on third party producers entails also having strong quality curation of partner offerings and a rapid ability to swap in one's own or a different partner's offering. Furthermore, those that expose their data and systems to outsiders can face increased risk of cyberattack. This means taking responsibility and being a good steward of others' data. Getting data means giving value back and protecting those who share it. On balance, those firms that understand and mitigate these risks significantly outperform the firms that stay closed and avoid the upside while avoiding the downside.

Creating the inverted firm has a number of important implications. Most important is that there are likely multiple holes in an organization's skill set regarding orchestration of third party value. Adopting digital technology alone will not transform an internal organizational structure to one that functions externally. Executives must understand and undertake partner relationship management, partner data management, partner product management, platform governance, and platform strategy. They must learn how to motivate people they don't know to share ideas they don't have. Firms as diverse as Barclays Bank, Nike, John Deere, Ambev, Siemens, and Albertsons have listed 200,000 job openings for these platform functions and to run their increasingly inverted firms. Indeed, firms that look only inward will be the ones that fail to move upward.

- **Marshall W. Van Alstyne** (mva@bu.edu) is the Questrom Chaired Professor at Boston University School of Business. His work has more than 10,000 citations. He co-authored Platform Revolution (W.W. Norton & Company, 2016), the April 2016 HBR article "Pipelines, Platforms, and the New Rules of Strategy" and the October 2006 HBR article "Strategies for Two-Sided Markets," an HBR all time top 50. Follow him on Twitter [@InfoEcon](https://twitter.com/InfoEcon).
- **Geoffrey G. Parker** (gparker@dartmouth.edu) is a professor of engineering at Dartmouth College and a research fellow at MIT's Initiative on the Digital Economy. He co-authored Platform Revolution (W.W. Norton & Company, 2016), the April 2016 HBR article "Pipelines, Platforms, and the New Rules of Strategy" and the October 2006 HBR article "Strategies for Two-Sided Markets," an HBR all time top 50. Follow him on Twitter [@g2parker](https://twitter.com/g2parker).