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# A blueprint for successful digital transformations for automotive suppliers

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Leaders in the automotive-supply sector are mastering six elements of successful digital transformation — and reaping the rewards.

**Digital disruption** is hitting the automotive sector hard, though the effects are still only just playing out. From the growth of electric vehicles to shared-mobility business models to self-driving cars, automotive companies are scrambling to catch each new wave.

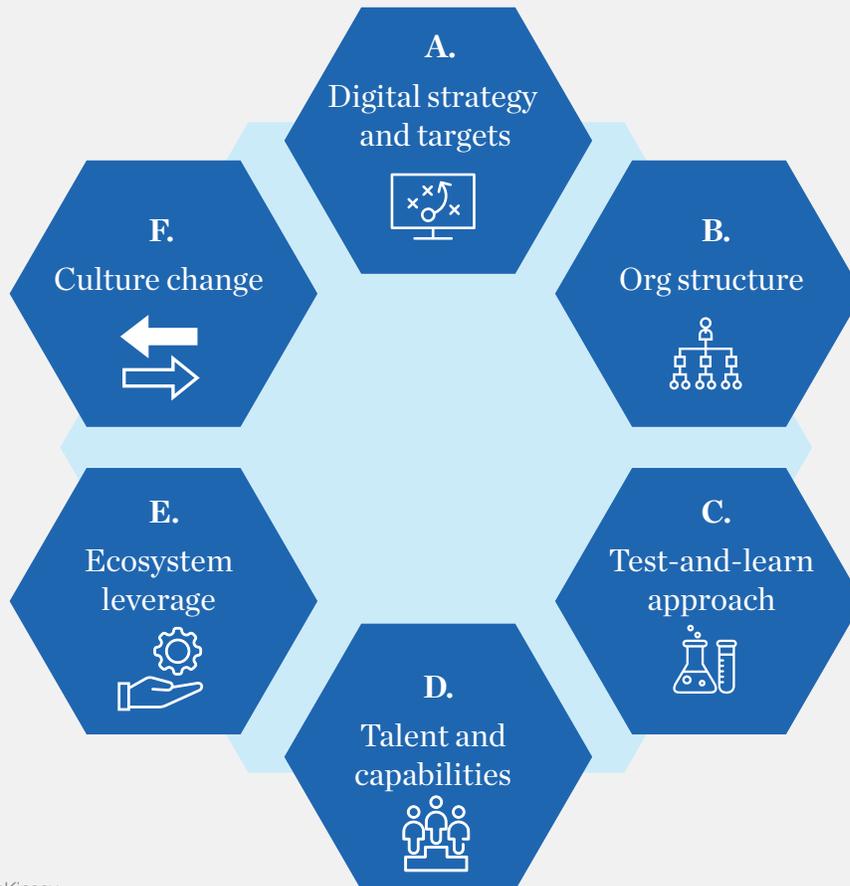
The largest original-equipment manufacturers (OEMs) have long been working on digital transformations, but most tier-one suppliers have only truly begun to develop new digital products and services and push hard to digitize internal processes within the past few years.

They might profit from some important learnings developed from progress on digital transformations

in other sectors. To name a few of the more important ones: digital transformations suffer from half measures; while there is enthusiasm for pilots, scaling them within the organization is hard and often does not yield the intended results; after pursuing a number of obvious measures, roadmaps tend to be vague or too narrowly focused, reflecting a lack of commitment; there are many small, product-focused digitization efforts ongoing in an organization, but there is no overarching strategy and no central coordination and moderation.

In our experience working with automotive suppliers, we have learned that successful digital transformations should be well designed and soundly executed across six core areas (Exhibit 1).

## The six elements of a successful digital transformation



Source: McKinsey

Central to the success of the transformation is being clear about the impact each of the six areas has on the others and understanding the key dependencies across all of them.

### A) Digital strategy and targets

The first step in the transformation process is developing a distinctive digital strategy that takes into account the myriad new ways value can be created with digital technology.<sup>1</sup>

One of the challenges for automotive suppliers is that digital technology generates two quite different kinds of opportunities: external and internal. On the external side, any new digital strategy must

contend with a series of disruptions we characterize with the acronym ACES: autonomy, connectivity, electrification, and shared mobility.<sup>2</sup> These changes mean suppliers have to think about a wide range of potential new approaches for engaging with customers.

Most suppliers have traditionally sold only on a B2B basis to OEMs but now can consider how they might interact directly with end users. One potential offering might be extended warranties that cover components produced by a supplier. But regardless of the customer being targeted, any external digital strategy has to be anchored on delivering a superior experience.

## Positioning for IoT

A major tier-one automotive supplier has extensive expertise in developing IoT solutions in-house. It is capitalizing on its know-how to position itself as a full-service IoT provider for smaller automotive OEMs that lack the scale to develop solutions of their own.

The supplier is developing an IoT cloud and building its software-development expertise, with the goal of becoming a leader in offering IoT and connectivity solutions.

Internally, the primary sources of value reside in the cost-intensive areas of procurement and manufacturing. Internal strategy should focus on how digital technology can optimize underlying business processes. For example, this might mean a supplier applying advanced analytics to identify sources of manufacturing defects or digitizing the ordering process for OEM customers.

To make a digital strategy practical, it needs to be translated into a clear roadmap with specific actions that trickle down to key people in the organization, who will execute them. To track progress and maintain speed, leadership should put in place quantifiable key performance indicators (KPIs). Sample KPIs include the absolute number of digital products and services in the pipeline or the amount of R&D spending on digital technologies compared to total outlays.

At many automotive companies, there is a strong bias toward backing safe projects that yield incremental improvements. Focusing on a KPI like spending on digital R&D can help the business focus on riskier ideas that also have the potential to provide a bigger payoff. Good KPIs should also address cultural issues like employee satisfaction, organizational measures, or capability-related metrics like the percentage of digitally trained staff or digital-talent turnover.

### **B) Organizational structure for the digital transformation**

In our experience, businesses are most successful in pushing through a digital transformation by organizing around one of three primary archetypes (Exhibit 2).

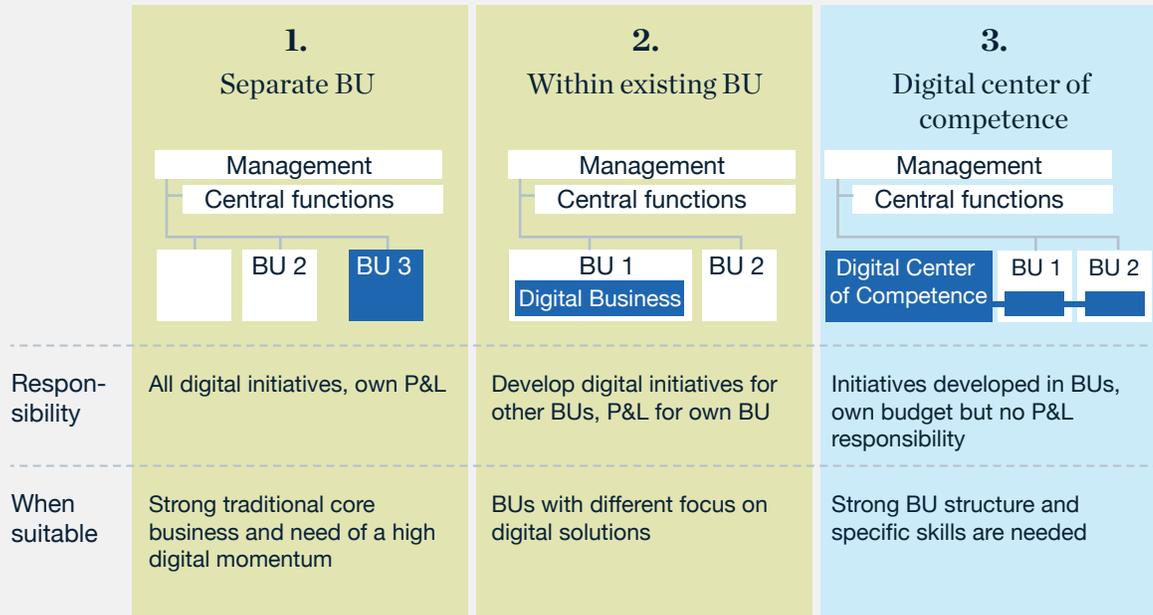
While establishing a new, separate digital unit (archetype 1) or embedding a digital business within an existing business unit (archetype 2) are valid options, establishing a digital center of competence (archetype 3) is most relevant to auto suppliers (since units typically are large and operate relatively independently). The digital center of competence (DCoC) is responsible for setting direction and ensuring that learning is widely shared. In this structure, the competence center does not have P&L responsibilities, but it does have its own budget, and each business unit (BU) owns its own internal digital initiatives. The DCoC assumes three important functions to develop products and services, build skills across BUs, and create external networks (Exhibit 3).

Such a structure provides a way to survey existing digital initiatives, identify opportunities for synergy, eliminate overlapping initiatives, target new initiatives, and prioritize new capabilities to be developed or acquired. Most companies that choose the competence center structure also appoint an

EXHIBIT 2

There are three primary governance archetypes for a digital transformation

Most common setup, detailed in next exhibit



empowered chief digital officer (CDO), who reports directly to the CEO or CTO.

C) Pilot projects that use a test-and-learn approach

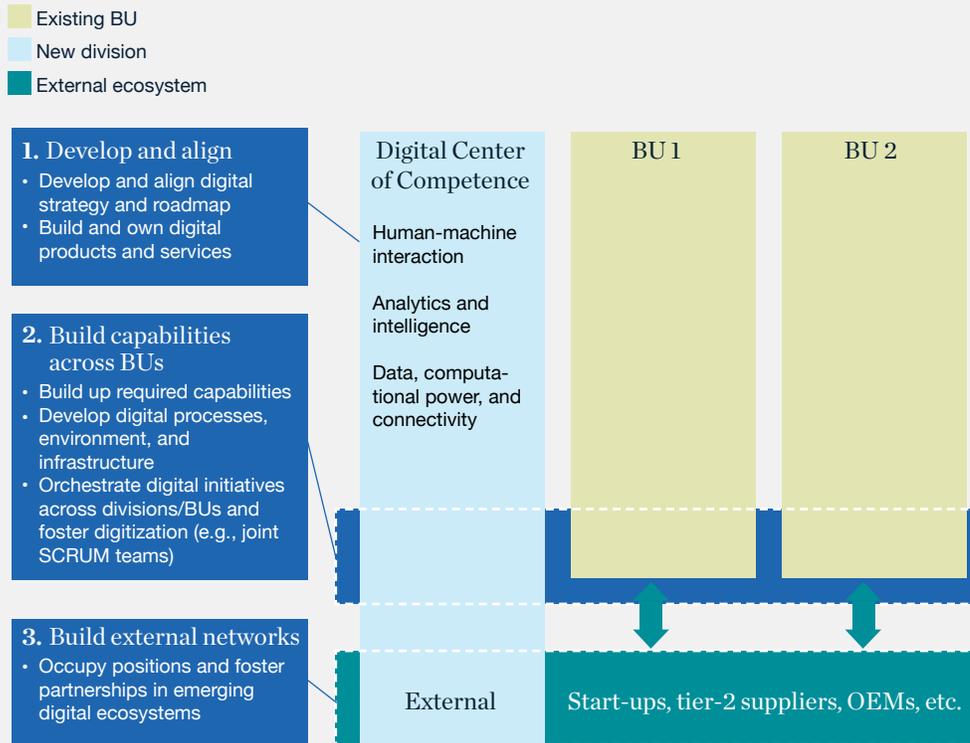
While digital transformations need to be broad in scope and scale, the action “on the ground” revolves around launching digital pilot projects. This happens when small, cross-functional teams create a prototype of something new, such as a novel way to connect with customers or an envisioned process improvement, tests it live to gather feedback, and then iterates based on what is learned.

And, to be fair, most suppliers have already launched some digital pilots. But the mind-set of failing fast and moving on that is central to the test-and-learn approach has not caught on at nearly the

scale necessary to accelerate transformation. One reason is that it is a major departure from the slower, waterfall method of development, which requires full definition up front followed by programming and debugging, and fits with a culture of precision engineering and zero defects that has understandably been highly praised.

To help overcome such cultural roadblocks, it makes sense to start with a mix of process improvements and customer-facing initiatives. The former require fewer resources and, when successful, provide increased process quality and stability. The latter can be more complex but offer a large upside. Automation and predictive analytics can also help reduce concerns by more quickly and effectively isolating issues.

**EXHIBIT 3 Digital Center of Competence has three main functions**



Source: McKinsey

Undertaking an ongoing series of test-and-learn pilot projects is what gets the digital transformation started. Critical actions for making these pilots work include:

- **Ensure initial funding.** Allocate funds from the central CDO budget to avoid unnecessary delays in starting the project.
- **Build effective teams.** Staff teams initially with in-house talent, augmented by external staff as needed. Partnering with start-ups also helps, since they can provide capabilities automotive companies often find difficult to recruit or develop in-house. When the internal staff complete their work on pilot teams and

return to their prior positions, they can become ambassadors for the new way of working and also serve as links to the digital unit.

- **Strictly follow the test-and-learn method.** Be clear about protocols and accountability so that teams understand how to fail early and rethink the idea based on lessons learned from the failure.
- **Demonstrate success.** Drive for early results, which can create enthusiasm across the organization.

While the pilot projects are being fielded, automotive suppliers also need to standardize the approach for scaling digital solutions across broad domains—such

## Using predictive analytics to lower risk

A leading supplier of gearboxes for a variety of applications, including automotive components, wanted to identify problems in its manufacturing process earlier and with more certainty. It tried new advanced analytics algorithms to test how effectively it could leverage data from new sensors connected to its testing equipment (vibration

sensors, microphones, cameras, etc.) at the final step of the manufacturing process. Analyzing the results and adjusting to reflect them, they were able to predict failures four weeks in advance and to reduce manufacturing defects by approximately 40 percent with high reliability, while also enhancing maintenance capacity.

as predictive maintenance, IoT, or core business processes. Standardization can help accelerate projects by reducing confusion and creating common tools that broad groups of people can use. To do this, IT experts should identify the pilot projects already in the pipeline and develop a common technical platform that lays out key specifications, such as how data gets accessed and algorithms are stored. In this way, suppliers can support more tests at once and more quickly scale up those that are successful.

### D) Talent and capabilities

Digital transformations often require technical capabilities (software development, sensor processing/fusion, cybersecurity, artificial intelligence) that legacy organizations lack.

To attract talent, incumbent suppliers need to offer appealing work environments and the right incentives. In cutting-edge areas like machine learning or analytics, locating offices close to technical hubs allows talent to be near like-minded experts and also helps better position a company as part of the digital ecosystem.

While automotive suppliers can locate software developers offshore, many find it better to have ideation and prototyping teams physically close to the core business. This facilitates cross-functional communication and helps to spread an agile way of working within legacy business units.

There may be lot of knowledge and creativity within the existing employee base, as well. Activating

## Attracting talent

A leading technology player based its location decisions for new software hubs solely on the availability of needed talent. For example, it placed one hub offering geodata services in Switzerland to benefit from the presence of other similarly focused enterprises there. It also streamlined its recruiting process in innovative ways. For instance, to find analytics talent, it posted billboards with

complicated math problems that, if solved, revealed an online address. When visitors solved yet another math problem successfully, the company asked them to submit résumés. This approach, long prevalent in the IT sector, is now being emulated by auto suppliers seeking to establish their own links to talent hot spots.

this talent is another factor insustainable digital transformation. For example, a leading tier-one supplier launched an internal innovation challenge to engage all employees in digital ideation. The competition generated more than 300 submissions within a few weeks, and the best were invited to make pitches in front of a senior-management jury. The winners received funds to develop a minimum viable product (MVP) and visited a start-up hub to discuss their ideas with potential partners.

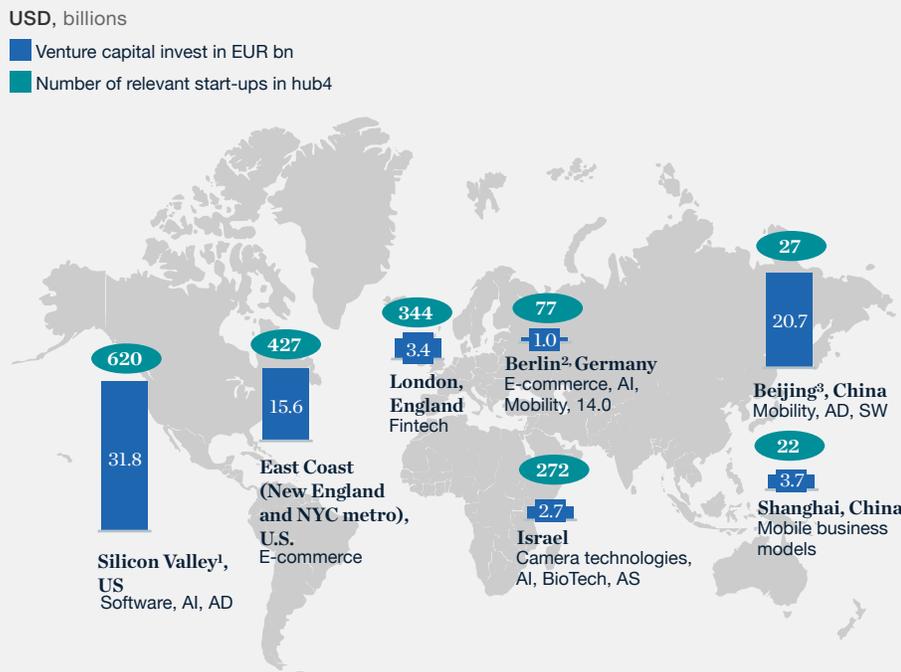
### E) Ecosystem

Given the myriad disruptions in the automotive industry, success today requires an ability to collaborate in new ways with former competitors

from the auto sector and new digital players, who are often based in tech hot spots (Exhibit 4). No longer will competition be limited to a stand-alone technology stack; instead, a company’s value proposition will become increasingly dependent on its ability to attract the right partners.

To tap into tech hot spots, one global tier-one automotive supplier provides start-ups with access to resources such as office space, tools, and media assistance. Such an approach allows a company to establish close relationships with innovative companies and thereby gain access to their new ideas and entrepreneurial energy.

**EXHIBIT 4** Venture capital investments in top hot spots, 2016



<sup>1</sup> Including San Francisco and Southern California

<sup>2</sup> Including rest of Germany

<sup>3</sup> Beijing driven by several large deals (e.g., Didi Chuxing)

<sup>4</sup> Keywords include internet of things, AI, cybersecurity, machine learning, industrial automation, electric vehicle, autonomous vehicles, speech recognition

Source: pitchbook.com; crunchbase search; McKinsey

One effective way to connect with tech hot spots is to establish a well-funded digital hub that can identify relevant technologies and link them back to the core business. Getting close to tech hot spots can allow automotive suppliers to scout for new ideas, test them, and secure and scale needed IP. A lighter-weight mode of connection is a digital-experience tour, in which key executives visit a tech hot spot and meet with start-ups and venture-capital firms. Such visits can expose executives from automotive suppliers not only to new technologies but also to novel ways of working and thinking.

Once prospective partners in the ecosystem have been identified, there are a variety of ways to work with them, ranging from collaborations that involve a limited financial commitment to outright acquisitions (Exhibit 5).

## F) Culture change

Automotive suppliers are typically bastions of conservative, traditional perspectives, so it's critical to foster changes in culture and mind-set. Several large suppliers have launched change programs to establish a digital mind-set and culture geared toward agile ways of working across all its BUs and at every level of the organization.

Three key actions can reinforce an organization's commitment to cultural transformation:

### Foster understanding and conviction

Define what "digital" is and create excitement by providing clarity on new digital opportunities and how they could transform the supplier and reshape the industry. In practice, this means making big bets and allocating real money and resources to back them up.

**EXHIBIT 5** Collaboration models for connecting with ecosystems

Financial Involvement	Archetype	Example
 <p>Low</p> <p>High</p>	 <p><b>Project collaboration</b></p>	Provides start-ups with access to resources like space, tools, and media
	 <p><b>Joint projects</b></p>	Start-ups <b>pitch</b> their digital <b>solutions</b> and prototypes to executives; winners work on a <b>joint project</b>
	 <p><b>Investments</b></p>	<b>Independent fund</b> to <b>invest in start-ups</b> with <b>focus on related sectors</b>
	 <p><b>Joint venture</b></p>	Develop own <b>services</b> to compete with <b>competitors and tech giants</b>
	 <p><b>Acquisition</b></p>	<b>Acquiring</b> companies that fit the strategic roadmap to <b>improve service offerings</b>

### Establish reinforcing mechanisms

Build structures that support innovation and the supplier's digital goals; focus on memorable digital events to foster a sense of community. Empowering front-line workers is crucial—for example, providing data to help them make better decisions when interacting with customers—according to our research. The other side of this coin is holding people accountable for their work.

### Feature digital role models

Reward publicly and often role models who act innovatively and digitally both at work and in their lives outside work.



The automotive sector is undergoing the kind of upheaval not seen since the industry's infancy a century ago. Automotive suppliers that can manage successful digital transformations will position themselves to win in the new world that is emerging. ♦

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<sup>1</sup> For more on developing a digital strategy, see the articles in McKinsey's special series, *Strategy in a digital age*, May 2017.

<sup>2</sup> A McKinsey podcast with senior partners Asutosh Padhi and Andreas Tschiesner provides more detail on the ACES framework, see "How the auto industry is preparing for the car of the future," December 2017.

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