A Strategic Guide to Digital Innovation

How to transform and scale up models and mindsets
Contacts

**Germany**

Jens Niebuhr  
Partner  
PwC Strategy& Germany  
+49-211-3890-195  
jens.niebuhr@strategyand.de.pwc.com

Holger Röder  
Partner  
PwC Strategy& Germany  
+49-69-97167-487  
holger.roeder@strategyand.de.pwc.com

Jonas Seyfferth  
Director  
PwC Strategy& Germany  
+49-89-54585-596  
jonas.seyfferth@strategyand.de.pwc.com

About the authors

**Holger Röder** is a Partner at PwC Strategy& Germany and a highly experienced practitioner in Strategic IT Management and Digital Transformation. He leads the Technology Strategy practice in Europe, Middle East and Africa and is responsible for the Technology, Media and Telecommunications practice in Germany, Switzerland and Austria. His industry focus is on process, automotive and manufacturing.

**Jens Niebuhr** is a Partner at PwC Strategy& Germany and advises on corporate transformation and capability development, specifically in the context of digitalization and technology change. His industry focus is on retail, consumer, telecoms and high tech.

**Jonas Seyfferth** is a Director at PwC Strategy& Germany and a leading practitioner in digital strategy and transformation. He focuses on building up digital business models and new units for automotive, technology and industrial players.

**David Eberle** is a Manager at PwC Strategy& Switzerland, specializing in digital transformation and innovation.

**Katrin Schwarz** is a Manager at PwC Strategy& Germany, focusing on digital business models and technology.

**Bernhard Skritek** is a Manager at PwC Strategy& Austria, focusing on digital operating models.
Digital innovation may be a high priority for most companies, but getting results is proving hard.

We recently polled 50 chief information officers (CIOs) and chief digital officers (CDOs) across Germany, Switzerland and Austria (with additional samples from the US, Japan and the Netherlands). We found that barely 10% of companies were managing to grow revenue from digital initiatives to more than 5% of group revenue.

One of the main reasons is that companies that have set up digital units (DUs) to drive this are not getting the most from them, organizationally and in other ways.

The result? While DUs generate a lot of ideas, only 8% of companies with DUs have successfully scaled their ideas up into a launched product.

In general, companies are not sufficiently scaling up their innovation projects, or rolling out their minimal viable products properly, to generate growth. Many are stuck in what we call “scale-up gridlock”. Typical problems include the lack of integration with legacy business, lack of autonomy due to potential business cannibalization, and attracting the right talent to build scale.

There may also be over-reliance on spending on research and development (R&D) to drive innovation success. And there is insufficient recognition that to pursue digital innovation successfully, leaders need to align their innovation strategy with their overall vision.

We think much of this could be solved by setting up DUs in a better way. Specifically, they should be set up away from the core of the business, for the reasons we set out below.
Digital innovation: the record so far

Companies have been busy implementing digital innovation through investments, often across PwC’s “Essential Eight” technologies that have been identified for their likely impact and commercial viability over the next 5-7 years.

These are the “technology building blocks” that PwC believes every organization must consider: artificial intelligence, augmented reality, blockchain, drones, Internet of Things (IoT), robotics, virtual reality and 3D printing.

Companies in 2018 spent a $79bn globally on acquisitions of digital technology start-ups – about nine times more than five years earlier. They also set up DUs. More than 100 have been established, by mostly large, listed companies in Germany, Switzerland and Austria alone. This is expected to reach at least 300 by 2020.

However, according to our recent Digital Executives Survey, barely 10% of companies managed to generate more than 5% from DUs as a proportion of group revenue. Forty percent of companies saw no significant impact from digital innovation.

Put simply: companies are generating plenty of new ideas, business models, and technology prototypes but most are failing to get them to a scale that allows the enterprise to succeed.

The DU: what is it?

Now let’s zoom in on the DU, which is often the vehicle for digital innovation. A typical DU is a ring-fenced entity with its own governance, budget, and even culture, and they are now relatively common in companies across a range of sectors such as electronics, airlines, and engineering. They are fairly widely used at large companies, and can sometimes be known as digital laboratories.

Many focus solely on the ideation and prototyping phase of the innovation process. In many cases the company’s business units or IT department are then unable to scale up digital innovation projects on their own.

That’s because while DUs are often blessed with external hires bringing fresh talent to the industry and funding beyond the typical corporate straitjacket, this also creates a gap between the new and the legacy business, with many companies reporting disconnected teams, stranded ideas, and forgotten prototypes.

Indeed, while DUs generate a lot of ideas, only 8% have successfully scaled-up into a launched product.

This helps explain why we think a significant share of the €6bn expected to be invested in DUs by 2020 in Germany, Switzerland and Austria could be wasted. We arrived at this estimate by taking the average funding level for each DU, taken from our Digital Executives Survey, and
multiplying that by the number of DUs expected to be created in a further wave of DU creation, which we believe will largely take place at Mittelstand companies (small- and medium-sized businesses).

**The DU: doing it right**

To succeed, DUs need to be set up in the right place and with the right purpose.

In general, innovation is either carried out close to the core of a business or away from it. For example, a company might set up a new delivery channel for an existing product or service, or a company might launch a completely new service unrelated to the existing business.

Innovating close to the core of the business means that most of the activity takes place in close proximity and relation to existing products and services, processes and staff. These initiatives then need to be scaled up within those core businesses (see Exhibit 1).

**EXHIBIT 1**

**Decision matrix**

<table>
<thead>
<tr>
<th>Business-driven innovation</th>
<th>Technology-driven innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business unit</strong></td>
<td><strong>Digital unit</strong></td>
</tr>
<tr>
<td>Business process improvement, better customer experience, value added services etc. using known technologies</td>
<td>Innovative business models beyond the core business</td>
</tr>
<tr>
<td><strong>Technology department</strong></td>
<td></td>
</tr>
<tr>
<td>Emerging technologies enabling radically new ways of working</td>
<td>Technology experimentation for completely new or far out propositions</td>
</tr>
</tbody>
</table>

Close to the core | Beyond the core

Source: PwC Strategy&
In this case, the innovation exercise is better carried out by existing business units, or the IT department. That’s because a separate DU effectively means setting up a satellite unit that will often struggle to make the connections needed with the legacy business to integrate and implement the innovation in question.

For example, the introduction of a customer self-service app would need to tie in product and process data, requires customer experience alignment with other touchpoints, and is subject to a whole set of overarching privacy and security requirements.

These inter-dependencies need to be dealt with effectively to enable scaling of the innovative solution in question. The line organization is best suited (provided relevant capabilities are available) to ensure alignment and growth.

Moreover, if a DU were deployed “at the core” in this way, there is risk that the team in the DU would struggle to win acceptance from the main business unit or IT department for the innovation that it had come up with. In other words, a “not invented here” mentality might create problems.

Now let’s look at innovation beyond, or on the fringes of, the core business. Here, the inter-dependencies described above are much less pronounced. Innovation in this space thrives on blue sky thinking and new business models, and is not limited by embedded processes, systems and culture.

### EXHIBIT 2
Digital units in the innovation process

<table>
<thead>
<tr>
<th>Ideate</th>
<th>Prototype</th>
<th>Scale-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Build-up</td>
<td>Operate</td>
</tr>
</tbody>
</table>

#### Business unit
- **A. Laboratory (10%)**
- **B. Competence center (60%)**
- **C. Solution provider (20%)**
- **D. Company builder (10%)**

Digital unit (% of companies operating the type of digital unit; answers are non-exclusive) → Flow of ideas

Source: PwC Strategy&
Having a DU here enables a visionary and entrepreneurial approach to problems, with the ability to move quickly, to learn – and even to fail – fast. Ideation, development, launch and scaling stays in one place – and scale-up gridlock is avoided.

We have found through our client work and from the results of the Digital Executives Survey that there are four effective DU archetypes (see Exhibit 2 on previous page) that we think can guide your thinking as you look at digital innovation: Laboratory, Competence Center, Solution Provider, and Company Builder. Each has its own unique value proposition, governance, capabilities and financial model. Each has a different focus in the innovation process from ideation to scale-up, with a different interaction model with the company’s business units and IT department (see Exhibit 3).

### Exhibit 3
#### Digital unit archetypes

<table>
<thead>
<tr>
<th></th>
<th>A. Laboratory</th>
<th>B. Competence center</th>
<th>C. Solution provider</th>
<th>D. Company builder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value proposition</strong></td>
<td>Ideation and prototyping geared towards roll-out to business segments</td>
<td>Specialized methodology and technology capabilities (e.g. design thinking or AI)</td>
<td>End-to-end scale-up of product or service as plug-and-play solution</td>
<td>Development of ready-to-exit companies</td>
</tr>
<tr>
<td><strong>Setup</strong></td>
<td>• Dedicated team or virtual network</td>
<td>• Dedicated team or virtual network</td>
<td>• Dedicated unit</td>
<td>• Spin-off into separate entity • Supervisory/ investor board</td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Financial model</strong></td>
<td>Pull from business units (BUs) (profit or cost center)</td>
<td>Pull from BUs (profit or cost center)</td>
<td>Pull from BUs (profit center) or top-down push (cost center)</td>
<td>Top-down focus areas, financed often via dedicated fund</td>
</tr>
<tr>
<td><strong>Typical size/capacity</strong></td>
<td>5-10 Employees 10-20 p.a. Prototypes developed €2-5m Budget</td>
<td>&lt;25 Employees 20-40 p.a. Projects supported &lt;€10m Budget</td>
<td>25-50 Employees 2-3 p.a. Solutions launched €10-20m Budget</td>
<td>10 + X 3 Employees + Venture teams 2-3 p.a. Ventures launched €5m + X3 Ops Budget + Fund</td>
</tr>
</tbody>
</table>

---

1 Back-office and recruiting only 2 E.g. fundraising, recruiting key staff such as founders or product managers 3 Team/funding per venture to be added

Source: PwC Strategy&
A. **Laboratory** (10% of DUs)
Small team focusing on ideation. Develops ideas around themes/technologies mandated by the organization. Business units or the IT department typically take over interesting ideas at the early prototyping stage.

Example: Lufthansa’s Innovation Hub sourced 200 ideas, of which 5% were prototyped using resources from other business units. The DU launched an open API to allow external developers to build their own offerings. More than 400 developers registered, with over 10% creating their own prototype.

B. **Competence center** (60% of DUs)
Small team, often focused on refining and prototyping ideas around a specific theme (e.g. blockchain). While scale-up is done by other business units or the IT department, the competence center provides support through specific expertise.

Example: A global engineering and electronics company operates a competence center providing physical space, IT capabilities, a legal framework and management support to take ideas beyond the prototyping phase. Since its foundation in 2013, it has supported the scale-up of more than 14 internal start-up teams.

C. **Solution provider** (20% of DUs)
End-to-end scale-up unit. Takes over mature ideas or prototypes from the organization and develops them into fully-scaled offerings. Also responsible for end-to-end operations. Typically a larger unit than the two previous archetypes, with 25 to hundreds of employees.

Example: Deutsche Bank’s Digital Factory, which operates a solution provider and now has over 400 employees, takes ideas from its innovation hubs or from the line organization and develops them into fully-functioning digital products and services.

D. **Company builder** (10% of DUs)
 Takes over successful prototypes/pilot projects and builds a team around the project, which will then scale up and operate the offering. May result in a spin-off or being folded into an existing business unit. Typically this is small team of about 10 experts that helps project teams scale up.

Example: Otto Group’s Liquid Labs is a separate entity within the group company, supporting the creation of new and independent businesses and sourcing prototypes/pilot projects both within the company and from the market. One of the scaled-up and spun-off businesses, a fintech providing fraud prevention technologies, developed into an international company.

Our decision navigator (see Exhibit 4 on next page) is designed to help you choose a DU in line with your firm’s strategy.
We’ve identified four factors to keep in mind when scaling up and operating a DU:

1. **Structure**
   - Establish flat hierarchies within the DU, allow teams to be adjusted flexibly, and ensure cross-functional staffing (in particular between business units and IT). Have the DU report directly to the chief executive or a strong CDO to ensure sufficient freedom to operate.

2. **People**
   - Design an agile, fast-track hiring process that might need to bypass existing bureaucracy to quickly engage new talent with critical skills (e.g., cloud development, content marketing). Make sure that employees are able to work flexibly, according to the overarching priorities of the unit.

3. **Processes**
   - Balance flexibility with robustness when designing the key processes of the unit. Apply agile philosophy for ideation and prototyping and technology development. For marketing, sales, and recruiting, apply pragmatic “lean startup”-like principles.

4. **Technology**
   - When building software, build it on small modules to allow for changes later. Focus the software first on where the end-user can use it. Build the back-end algorithms later. Prioritize utility, innovation, and speed in the unit’s IT stack and software selection. Establish (open) API principles for efficient data sharing.
Conclusion

Before setting up a DU, think about its purpose – in other words, the kind of innovation you want to push: is it close to your core and requiring deep integration with your existing business, or does it go beyond the core?

If close to the core: think about a holistic transformation of the main business and IT organization to avoid scale-up gridlock, rather than setting up a separate unit. If beyond the core: a separate DU is a promising format to push innovation, taking advantage of new technologies and the boost in time-to-market.

Finally, to shift successfully towards digital innovation, leaders need to align their innovation strategy with their overall vision. The operating model needs to be designed in a way that enables successful execution of that strategy. And the entire company culture needs to be transformed to enable agile ways of working.

If these factors are borne in mind from the early stages of establishing a DU, companies are sure to boost the prospect of their DUs delivering winning solutions.
Strategy&

Strategy& is a global strategy consulting business uniquely positioned to help deliver your best future: one that is built on differentiation from the inside out and tailored exactly to you. As part of PwC, every day we’re building the winning systems that are at the heart of growth. We combine our powerful foresight with this tangible know-how, technology, and scale to help you create a better, more transformative strategy from day one.

As the only at-scale strategy business that’s part of a global professional services network, we embed our strategy capabilities with frontline teams across PwC to show you where you need to go, the choices you’ll need to make to get there, and how to get it right.

The result is an authentic strategy process powerful enough to capture possibility, while pragmatic enough to ensure effective delivery. It’s the strategy that gets an organization through the changes of today and drives results that redefine tomorrow. It’s the strategy that turns vision into reality. It’s strategy, made real.