Opening the garage door

Innovate like a startup; scale like an enterprise

IBM Institute for Business Value

Digitization in the auto industry

Digital technologies have upended the automotive industry. Formerly based solely on a business model of car ownership, the industry is fundamentally redefining itself into a multifaceted digital ecosystem. In fact, in a recent study from the IBM Institute for Business Value, 80 percent of executives said “comprehensive connected vehicle services” will be a key differentiator for consumers.[1] Today’s car manufacturers and suppliers face intense competition from startups and internet companies with new business models, agile processes and rapid releases. To innovate and scale, industry leaders will need to combine the creative skills of a startup with the traditional strengths of an industrial enterprise.

Developing digital products using the Garage Factory model

Today's automotive consumers expect seamless, customized auto experiences. As their personal mobility expectations grow, OEMs are turning to companies that offer digital mobility services to help them with tasks such as dealing with traffic, parking or simply getting from place to place. Having direct access to customers through a digital platform with a diverse product and service ecosystem creates opportunities for new revenue streams. Ride sharing, e-hailing, subscription pricing and platform marketplaces are a few examples of monetization opportunities that have emerged through digital technologies.

Original equipment manufacturers (OEMs) are aggressively implementing digital services in and around their vehicles to meet consumer demands. Direct access to customers and usage data is critical for creating a personalized in-vehicle experience and long-term customer loyalty. Companies that occupy this central position of customer interaction have the potential to capitalize on both customer and mobility market opportunities.

Large automotive companies have already tried to imitate the digital industry's approach but often failed because of internal processes or lack of scalability. Leading car manufacturers need a way to combine startup innovation with the scalability of the traditional automotive industry.

"The last, best experience anyone has anywhere becomes the minimum expectation for the experiences they want everywhere."

Paul Papas, Global Leader IBM iX

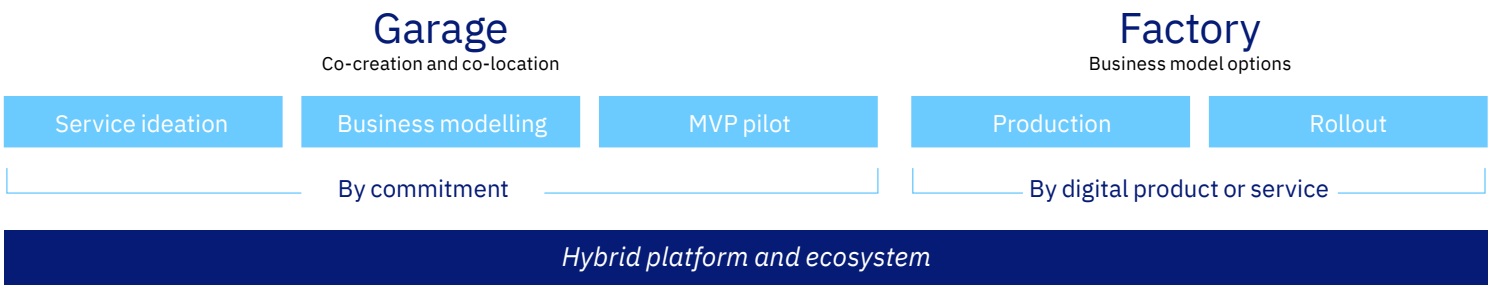
Adopting a new approach

The Garage Factory model marries the possibilities of agile methods with the capacity of enterprise approaches. It provides a framework for the development and operations of digital products all the way from idea to finished product. The term "garage" communicates the innovation of the first product development phases, which include ideation and minimum viable product (MVP) development after extensive business modeling.

In the garage phase, customer benefits and business potential are extensively explored and the fundamental product viability is validated with prototypes.

The close cooperation between both partners including co-creation and co-location sets the garage apart from traditional OEM-supplier relationships. The "factory" side of the framework involves scaling the product in two phases after the first market launch (see Figure 1). The production phase involves iterating the product based on market feedback. It also prepares the product for a large market launch including local adaptations and product hardening. The rollout phase scales the product development capacity by identifying the best possible use of marketing channels to achieve scale and relevance. This factory phase involves continuous development throughout the product life cycle.

Figure 1
Garage and factory: two phases in the development of digital products and services

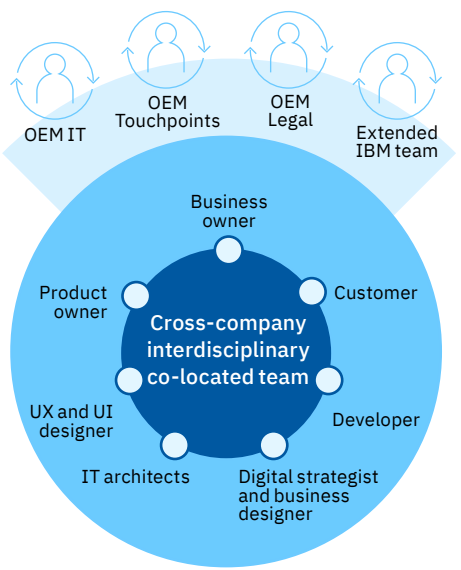


Incorporating the Garage Factory model through lean business innovation

The Garage Factory model defines the conditions for sustainable and scalable innovation. The process of developing products within this framework requires examining users and their needs. It also involves assessing the assets and capabilities of the business, such as the ability to expand into new areas. Approaches to potential business scenarios and possible metrics are developed to determine whether an idea is ready to go to market and its potential value. Given that only few ideas may make it to production, it's crucial to ensure a constant stream of ideas, not only from internal stakeholders, but also from ecosystem partners.

After the ideation phase, the concepts are transformed into concrete products and services by multidisciplinary, agile teams made up of the product owner, digital strategists, designers and developers. Once ideas have been transformed from digital prototypes to an MVP, a continuous cycle of testing begins with real users. The corresponding iterations and continuous product optimization begins and lasts for as long as it takes to identify growth trajectories or until the approach is rejected. This iterative testing with users enables rapid decision making and short turnaround times.

Figure 2
An interdisciplinary team and the integration of relevant stakeholders in the product development process



Implementing continuous delivery for shorter innovation cycles

The Garage Factory in practice

Volkswagen's new digital mobility service called "We Experience" gives drivers informed advice at the right time and the right place about everything from the most convenient gas station to the best restaurant.[2] Volkswagen and IBM collaborated to develop We Experience, which combines the basic services of Volkswagen's digital platforms with IBM cognitive abilities and cloud microservices. Trading companies, service station chains or the hospitality sector can use We Experience to present service offerings to new customers. The prototypes for new digital products like We Experience are created by collaborative, agile, interdisciplinary Volkswagen-IBM teams following the Garage Factory model.

A product or service that is being developed by agile, interdisciplinary teams is continuously honed and refined after release. Part of the process involves testing new releases as soon as possible to validate their functionality and their added value for the user or the business model. With a live product, the development team also can gain greater insights for future iterations.

The continuous and rapid improvement of products and services requires a technical platform that can meet the needs for project setup, implementation, integration, quality assurance and operations in terms of DevOps and microservices. The platform should include:

- Microservices, which can be quickly adapted from existing functions to comprehensive applications to significantly reduce the time-to-market.
- Cloud infrastructures, which can enable an almost frictionless dissemination of working outcomes and their transformation into scalable operation.
- DevOps support, which provides the framework for development teams to realize the iterative product innovation cycle of "develop — learn — improve" with greater autonomy.

Teams need to be able to make product changes with as little reliance on external factors as possible using developer-focused technical approaches and methods. Only with a modern infrastructure can applied theoretical approaches and methodologies culminate in practical, usable products and services.

The exponential potential of platform business models

Platforms are fundamental to the Garage Factory approach. In the automotive industry, exponential innovation potential no longer lies with a single product, but with multi-sided, platform-based business models. In the Institute for Business Value "Automotive Incumbents Strike Back" study, 44 percent of the auto executives surveyed said their companies are in one of the adoption stages of platform business models.[3] And worldwide, approximately 60 percent of the startups with a value exceeding USD 1 billion are based on platform business models.[4]

Because the platform business model connects automotive producers directly with consumers, it offers new opportunities. As the platform owner providing innovative digital services, automotive industry leaders can gain new insights about the customers they serve and a deeper understanding into the partners participating in the ecosystem. As you look for new ways to expand digital products and services, consider these questions:

- What digital products and services are resonating in your market and with your brand?
- How can you enable a platform business model and a partner ecosystem?
- How can you scale and generate revenues in your specific business environment?

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