

Learning from Start-ups

Every aspect of digitisation represents a challenge for the automotive industry which is unlike any that it has faced before. Even the German Association of the Automotive Industry (VDA) is now convinced that the challenge can only be overcome with the help of start-ups. The outdated structures in the vehicle manufacturing sector and the caution of venture capitalists are all that is preventing the German car market from picking up speed.

THE CHALLENGE OF DIGITISATION

Prominent captains of industry have recently made some surprising statements. This is not because the content of these statements are of great importance, but because they have been expressed by people working in an industry where no one expects wise remarks of this kind to be made. When the CEO of Daimler, Dieter Zetsche, referred in a speech at the company's supplier of the year event in the spring of this year to the fact that "in the digital age a culture is needed which consistently promotes innovation" in order to "make the best possible use of the opportunities of digitisation" [1], this caused amazement among those who grew up with bits and bytes. They are well aware that IT companies, which have little contact with the traditional products of the automotive industry, have for many years been primarily responsible for setting the pace of inno-

vation. These are often start-ups and young companies, which are highly innovative and keen to show significant growth in only a short time. If they have an innovative business idea, then they generally succeed in achieving this.

However, the traditional automotive industry, with more than 130 years' experience of making vehicles, still has the monopoly on the car of the future. Or at least it does if the development process continues to focus on passive safety, comfort and the internal combustion engine. But the car of the future consists of much more than that. It is networked and communicates with other vehicles and the infrastructure around it. And in future it will be able to drive autonomously. This development is a striking illustration of the fact that future innovations will not be characterised by mechanical components or by hardware. The crucial factor will be software. But can the established companies in the



CEO of Opel, Karl Thomas Neumann, is encouraging young people to become self-employed (© Opel)

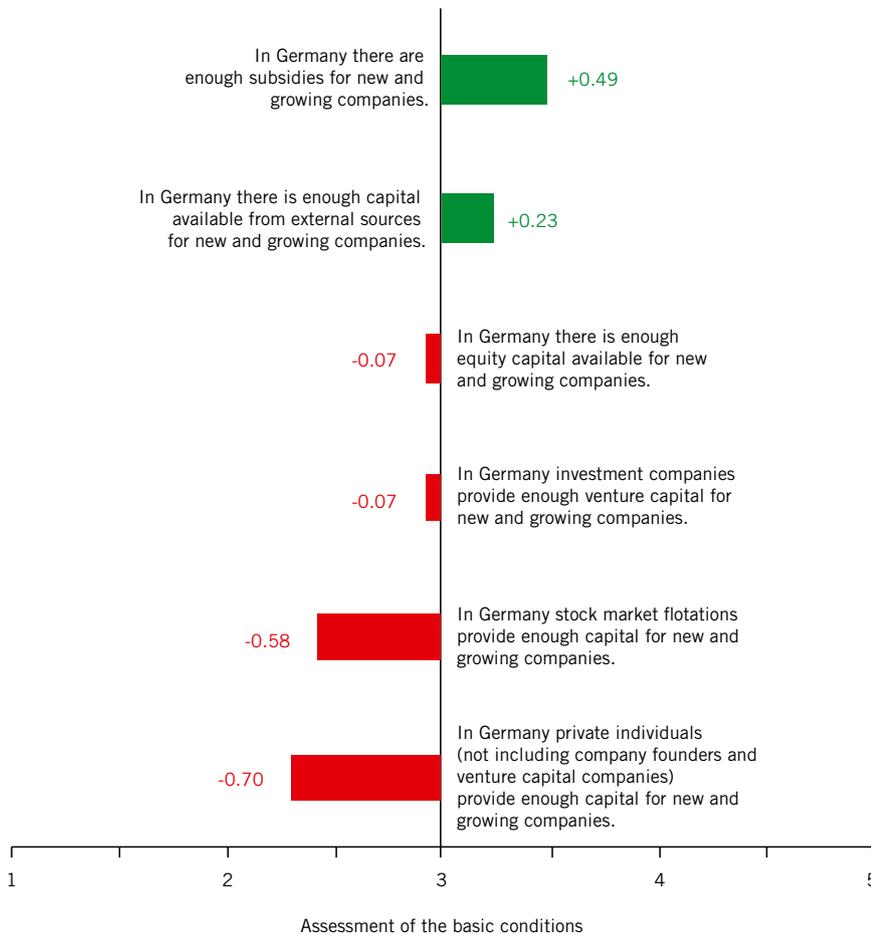
automotive industry with their outdated structures overcome the challenges facing them single-handedly, particularly in the light of this rather disruptive phase of development?

START-UPS ARE NEEDED

Professor Manfred Broy is sceptical about this, primarily because the concept of autonomous driving involves so many different areas, “which until now have not been the main focus of car manufacturers”. Professor Broy, who is Head of the Department of Software and Systems Engineering at the Technical University of Munich, also believes that new companies are required. “Large organisations would be well advised to identify a smart strategy for having their innovations developed by start-ups in areas where this makes sense,” says Broy, who in January 2016 also became founder and president of the Zentrum Digitalisierung Bayern.

The aim of this organisation is to support transdisciplinary research, projects and cooperation in order to promote new digital value-added chains, but only in Bavaria. It is also focusing on networked mobility, which is one of five platforms where new companies can demonstrate their creativity. Many of them have already been successful. One impressive example is the Centre for Digital Technology and Management (CDTM), a small organisation established by the Technical University of Munich and the Ludwig Maximilian University of Munich, which is already responsible for more than one hundred start-ups.

However, in the opinion of Dr. Chirine Etezadzadeh, Head of the SmartCity institute in Ludwigsburg, new players from outside the industry now have a good opportunity to become involved in the individual mobility market. These companies have the advantage “that they do not have to take any technological path dependencies into consideration during the development process”. The recent acquisition of Cruise Automation by General Motors shows that it is also possible to earn a large amount of money if you have the right idea. This start-up, which specialised in self-driving cars, was sold for more than one billion US dollars only three years after it was founded. But it gets even better than that.



The evaluation of the financing conditions for start-ups: The graphic shows the individual statements on financing conditions which were rated by the experts on a scale of 1 (completely untrue) to 5 (completely true); the red and green figures show the deviation from the theoretical midpoint of the scale of 1 to 5; source: GEM National Expert Survey 2014 [4] (© Global Entrepreneurship Research Association (Gera))

START-UPS FAIL BECAUSE OF ESTABLISHED STRUCTURES

Cruise Automation will operate as an independent unit within GM's recently formed Autonomous Vehicle Development Team. Dr. Tom Kirschbaum, a Member of the Board of the German Start-Ups Association and himself the founder of the Berlin mobility start-up Ally [2], explains why freedom of this kind is so important: "If a start-up is stifled by long-established processes, if the controlling department cuts off the money supply or if the large organisation's own research and development department takes over the reins, acquisitions of this kind are often doomed to failure".

In his view, start-ups work in a fundamentally different way from large companies. "The big organisation must accept that the young company may develop innovations outside its area of business," warns Kirschbaum. In other words, this means that purchasers which intend to take over the start-up's idea and pass it on to their own research and development department will sooner or later fail. The tendency of in-house R&D departments to keep control of innovations at all costs seems to be much more

pronounced in Europe than it is in the USA, according to Kirschbaum.

Broy also believes that "the biotope of large automotive companies, large suppliers and supply chains consisting of medium-sized enterprises that has grown up over decades" does not represent fertile ground for young start-ups. And the fact that in the USA among other places "it is much easier to get a meeting with the board than it is in Germany" is undoubtedly also because global organisations like Google have their roots in the start-up scene. How can German start-ups flourish in a country dominated by medium-sized firms?

THE IDEAL BIOTOPE FOR START-UPS

"The start-up scene is successful in countries where there is an investment-friendly environment, where start-ups can negotiate with large companies on an equal footing and where the state establishes conditions that promote new and revolutionary ideas rather than obstructing them," says Kirschbaum, describing the ideal biotope for start-ups. According to him, Germany is not the first choice, although things are now moving in the

right direction. Finance experts take a more extreme view. For example, a glance at the analysts' report produced by financial consultancy company Barkow Consulting from Düsseldorf shows a serious venture capital funding gap of almost 27 billion euros when compared with the USA which has been in existence since 2009 [3]. Although 1.5 billion euros of venture capital was invested in Germany in 2014, which represents at least one third more than in 2013, in the USA venture capitalists have on average invested 7.5 times as much since 2009 [3].

Germany has significant weak points as a location for starting a company. "This applies in particular to the provision of venture capital by business angels, the access to market capital and, to a lesser extent, to the commitment of investment companies," says the current Global Entrepreneurship Monitor [4]. And the authors warn that "for Germany as a knowledge and innovation location this is an unsatisfactory finding, because it is reasonable to assume that the lack of venture capital is severely limiting the establishment and successful development of innovative companies with the potential for high levels of growth".



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Dr. Tom Kirschbaum
Member of the Board of the German Start-ups Association



2 QUESTIONS FOR ...

ATZ _ Is Germany a good location for start-ups?

KIRSCHBAUM _ The start-up scene is successful in countries where there is an investment-friendly environment, where start-ups can negotiate with large companies on an equal footing and where the state establishes conditions that promote new and revolutionary ideas rather than obstructing them. Against this background, I don't believe that Germany is the first choice for start-ups. It is high time for us to get rid of our traditional ways of thinking and outdated structures. Given the very short development cycles in an automotive industry characterised by software, a year is almost an eternity.

Have I understood you correctly? Do many start-ups fail because of established structures?

Among other things, yes. If a start-up is stifled by long-established processes, if the controlling department cuts off the money supply or if the organisation's own R&D department takes over the reins, acquisitions of this kind are often doomed to failure. The big organisation must accept that the young company may develop innovations outside its area of business, particularly in the digital world. In addition, the reservations of many business and social policymakers in Germany are preventing a successful start-up scene from emerging. Uber and Mytaxi are examples of their concerns.



In the field of IT and 3-D printing, start-ups often have better ideas that the automotive industry can benefit from (© Andreas Burkert)

START-UPS GUARANTEE INNOVATION

But how are automotive manufacturers responding to this dilemma? Their response is a hesitant one, but includes approaches such as BMW's recently established Startup Garage. BMW's plan is to become a venture client in order to set up long-term collaborations with start-ups. As a spokesperson for the company explained: "In our programme, the start-ups will be working right from the beginning with BMW experts, so that we can incorporate their technology into our products". If the start-up then succeeds in developing a function which is relevant for BMW and its customers using its technology, "there is nothing to stop the transfer of the innovation", according to BMW.

While BMW sees cooperations with start-ups as an important part of the innovation process, Daimler is of the opinion that although new companies make a significant contribution to innovations, "the majority of innovations will

continue to originate from internal developments and traditional development processes". However, the car manufacturer does believe in the innovative ability of these companies. This is why its in-house mergers and acquisitions team is bringing together the necessary expertise for working with start-ups and venture capital companies and making the necessary contacts with other areas.

"We are also working with selected venture capital funds" in search of areas that offer strategic added value, as Daimler explains. To ensure that this process is successful, the Daimler business innovation department is focusing on promoting internal ideas as well as cooperating with external start-ups. The only question as yet unanswered is the extent to which the young guns can submit to the dictates of corporate structures without losing their identity. "We will give them as much freedom as possible in order not to inhibit their innovative ability or slow them down," says the Daimler team and explains that in future they "will offer

other options, such as incubators for start-ups, alongside the traditional investment model, in order to be able to respond flexibly to the industry's needs."

THE VDA ALSO RECOGNISES THE URGENCY

Is this the opportunity for people who want to start a company? Even the CEO of Opel, Dr. Karl Thomas Neumann, is calling on them to "Become an entrepreneur!" [6]. In a post on LinkedIn, Neumann, who recently became one of 500 global influencers on the network, describes his own career in order to give encouragement to others. "When I became self-employed at the age of 18, it was a big step for me. But setting up a small company specialising in software products for medium-sized businesses gave me the opportunity to learn a lot. It was a big challenge, but it taught me a great deal. I am still benefiting today from the knowledge I acquired then," he writes.

The German Association of the Automotive Industry (VDA) has now realised that start-ups offer a number of opportunities. The association has recently announced that it wants to increase its cooperation with the national and international start-up scene [7]. For Dr. Kay Lindemann, managing director of the VDA, this is a logical move in response to the trend for digitisation, “every aspect of which is having a considerable influence on the automotive industry”.

And because these new players in the automotive value-added chain are mainly young, creative software and digital start-ups, the association wants to involve them more closely in future in its activities in areas such as new forms of individual transport, the Internet of Things, digital mobility services and entertainment and information functions.

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WHAT DO WE THINK?

“Have more faith in young entrepreneurs”

The VDA has acknowledged the importance of a strong start-up scene. But because the industry is still reacting far too tentatively, American companies are busy buying up the best ideas on the market. They are not only enticing the start-ups with large amounts of venture capital, but more importantly with the freedom they need to be inventive. For many entrepreneurs, this is hugely significant. A ban on independent thinking, outdated processes and the constant presence of the controlling department can result in many innovations being throttled at birth.



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