

5. Internet of Things - Learning from the U.S.

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In the past, calling a cab was a rather unpleasant experience. One either stood outside, exposed to wind and rain waving or standing in line, or one could call the taxi dispatch after searching for the right number and then waiting 30 minutes or longer. Once seated in a mostly old and shabby car, the destination needed to be explained, losing time and patience. After arriving, one had to count the right amount of cash plus a tip. All said and done, very few people viewed searching for and using a taxi service as something enjoyable. This poor experience and a perceived lack of ability to change anything about it, created pent up frustration and demand from consumers to find something better. UBER tapped into that frustration and demand exceptionally well and is a prime example for the Internet of Things (IoT) and changing business models.

UBER is changing the way private transportation is done, this in several ways. First, its smartphone app is integrated with a map service so that one can see how far away the nearest car is, set a meeting point, view the driver's rating, and watch the car get closer. Once the UBER arrives, the driver greets by name and is very accommodating because he/she wants to maintain a good rating. After arriving at the destination, the charges are applied automatically to the credit card and one is free to go, again saving time and unnecessary discussions about the fare.

UBER removed the friction from the typical taxi transaction and has made it highly enjoyable in the process while creating entrepreneurial job opportunities for more than a million UBER drivers.

Agile Management

What is required to realize such creative ideas? Agile management is one answer. The term refers to an iterative, incremental method of managing the design and build activities for engineering, information technology and other business areas that aims to provide new product or service development in a highly flexible and interactive manner. It requires capable individuals from the relevant business, openness to consistent customer input, and management's willingness to non-hierarchical forms of leadership. The main difference between agile and iterative development is that agile methods complete small portions of the deliverables in each delivery cycle while iterative methods evolve the entire set of deliverables over time, completing them near the end of the project. Both iterative and agile methods were developed as a reaction to various obstacles that developed in more sequential forms of project organization. For example, as technology projects grow in complexity, end users tend to have difficulty defining the long term requirements without being able to view progressive prototypes. Projects that develop in iterations can constantly gather feedback to help refine those requirements. The end result is a product or project that best meets current customer needs and is delivered with minimal costs, waste and time, enabling companies to achieve bottom-line gains earlier than via traditional approaches.

American Work Culture and Visionary Leadership

The American work culture is very conducive to agile management. While some cultures remain centered on tradition and stability, American culture embraces change and considers it natural. Progress and innovation are important and many Americans often look for the next best thing. This is one of the reasons that the U.S. has been a good place for entrepreneurs with big ideas in the past. Many Americans tend to be constantly working towards the future. For this reason, they sometimes miss what is happening in the present and place little value on the past.

These days, parents start investing in their child's college savings fund before the child is even born. Kids are taught that they need to achieve high grades as young as elementary school because college is down the road.

For Americans, it's all about the future. The concept of future orientation and in particular the characteristics of visionary leadership are crucial to achieve success with disruptive business models. The GLOBE-study¹⁾ of 62 societies evaluated differences in culture, leadership, and organizations. The dimension of visionary leadership consists of nine components shown in Table 1, that describe the concept of Visionary Leadership in which the 62 countries were placed into four bands (high A - low D), the United States scoring very high in band A over Switzerland that is listed in band B only.

Table 1: Components of Visionary Leadership

Leadership Attributes	Description
Inspirational	Inspires emotions, beliefs, values, and behaviors of others; inspires others to be motivated to work hard
Anticipatory	Anticipates, attempts to forecast events; considers what will happen in the future
Prepared	Is ready for future events
Intellectually stimulating	Encourages others to think and use their minds; challenges beliefs, stereotypes and attitudes of others
Foresight	Anticipates possible future events
Plans ahead	Anticipates and prepares in advance
Able to anticipate	Able to anticipate future needs successfully
Visionary	Has a vision and imagination of the future
Future-oriented	Makes plans and takes actions based on future goals

For Swiss entrepreneurs and leaders, it therefore might be beneficial to be aware of these cultural differences and to ensure that project teams include visionary thinkers who, based on the Globe-study, are more prevalent in the United States. Furthermore, it is necessary that the team can work partly in such an American environment. While trust, conflict,

commitment, and holding each other accountable are the key characteristics of a cohesive leadership team, the above mentioned combination of Swiss and American virtues is very synergetic. It is worth mentioning, however, that cross-cultural teams, including people from all over the world, almost always lead to better outcomes and that the individual assessment of team members has priority. However, when evaluating a general environment, a more stereotypical approach can make sense.

A positive example of such an organizational setup is the following: In 2010, Belimo, a Swiss small cap company and global market leader in actuators and control valves for heating, ventilating, and air conditioning (HVAC) systems in buildings, was in the process of developing its first IoT product, the Belimo Energy Valve™. This innovative valve measures and manages the energy flow such that it optimizes the overall system performance and consequently saves energy.

At the time, the Massachusetts Institute of Technology (MIT) wanted to improve their HVAC-systems performance among their many large facilities. Facility engineers within the University's Sustainability and Utility Planning were interested in partnering with Belimo on some product development testing. Consequently, Belimo engineers from Switzerland together with engineers from MIT worked together in evaluating the product with the common objective of saving energy. The results were very positive for both parties. On the one hand, substantial savings could be achieved within the one building so that the technology was approved to roll out campus wide²⁾. On the other hand, the tested product could be further improved and could be launched in 2012 with great success. The inspirational and visionary environment at the MIT in Boston was crucial for the team's overall dynamics and accelerated the project while improving the outcome.

Economies of Scale

In microeconomics, economies of scale are the cost advantages that enterprises obtain due to size, output, or scale of operation, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output. Often this is the source that may lead to an advantageous position relative to the competition. In the UBER case for example, the original investment to provide the service only in San Francisco was over 200 million USD. Meanwhile, the smartphone app and other software infrastructure can be improved continuously employing hundreds of engineers to do so as its application can be multiplied globally.

The United States provides a potential for geographic economies of scale for new product our business model launches. This because of smaller incremental costs for management, legal, marketing, and logistics compared to a roll out within Europe that requires additional resources to verify each country's specifics while also managing multiple languages.

Swiss-American Networking

Leveraging both the Swiss and the American cultures and environments is crucial in particular when rethinking technology or business models with IoT. The Swiss-American Chamber of Commerce provides an ideal platform that is conducive to information exchange and, as a result, sparks the creativity and visionary leadership that is required for innovation.

- 1) Culture, Leadership, and Organizations, The GLOBE Study of 62 Societies by Robert J. House et al. © 2004 by Sage Publications, Inc.
- 2) Improving Campus Chilled Water Systems with Intelligent Control Valves: A field study by Gregor P. Henze, University of Colorado Boulder, Walter Henry, Massachusetts Institute of Technology, and Marc Thuillard, Belimo Automation Ltd.

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