



Animated video serie «Little Green Bags» of the University of St.Gallen (HSG)

[»»Playlist](#)

Business Models and the Internet of Things

Authors: Prof. Dr. Elgar Fleisch, Markus Weinberger, Institut für Technologiemanagement
Copyright: Universität St.Gallen (HSG) / Text: Elgar Fleisch, Markus Weinberger, Institut für Technologiemanagement (ITEM-HSG) / Kreation: Zense, Andri Hinnen

“Freemium, long tail or hidden revenue. Everybody knows that the infamous “Internet” has not only refined many established business model patterns but also spawned a series of completely new ones.

Google and Facebook give away their products for free, yes. But they earn billions on user data and targeted advertising. Amazon and Alibaba owe their success to offering unlimited products – without wasting money on shelf space. And Skype and LinkedIn allure customers with free and basic services, just to sell them pricy premium products later on.

But even though digitalisation has radically changed the way we do business, the physical and the digital world are still separated from each other.

This is, however, about to change with the Internet of Things.

The Internet of Things?

The Internet of Things stands for the vision that the physical world of atoms and the digital world of bits merge together.

So far, humans have been the only connection between these two worlds. Soon, however, also sneakers, bicycles, warehouses, supermarket shelves, radiators and hotel kitchens will be connected to the Internet and to each other.

Now, the question arises how the Internet of Things affects business model innovation – and how companies, entrepreneurs, and customers are supposed to respond.

Let’s take a thing, a lamp for instance, and add a sensor that connects this things to the Internet – for example a presence sensor. In addition to its physical function of generating light, the lamp now offers a range of new, digital services.

The lamp can now be used as, let’s say... a security system While its owner goes on holiday, the lamp turns on and off automatically. And if some burglar breaks in despite this deterrent, the lamp sends a message to its owner. And to the neighbours. And to the police! Which all happens at a negligible cost.

Let’s break it down to a simple formula:

As a supplier, you combine a physical thing with a number of IT components – sensors, actuators, an Internet connection and cloud-based data analysis. As a customer you then profit not only from the thing's physical and local function but also from a series of new digital services.

The possible applications are endless: a box of goods in a warehouse that “knows” when it's empty and signals it is time to restock supplies, a watch that measures your heart rate and alerts an emergency physician when anomalies occur or a rentable bicycle that only debits your credit card after the first two hours of use.

The physical thing plus IT – let's call it a hybrid thing – keeps its original and local function. But the connection to the Internet presents a multitude of new service possibilities.

These services can be enjoyed from anywhere and they can be realised at very low marginal costs.

The lamp's presence information can be used not only for burglary prevention, but also for heating cost optimization, or, in connection with the aforementioned heart-rate watch, for sleep regulation.

On top of this, the Internet of Things also expands the customer portfolio of physical things – thanks to the generated user data.

This user data not only enables the lamp owner to optimise his own life, but also helps, for example, energy suppliers run their networks more efficiently.

Therefore, a physical thing with an added IT component is a lot greater than the sum of its parts.

And we can use this great whole for numerous new business models. So-called digitally charged products allow for a multitude of possibilities. Examples are physical freemium, digital add-on, digital lock-in, the product as a point-of-sales or object self-service.

Yet, the most important transformation the business world is undergoing thanks to the internet of things, is another.

For years, digital giants such as Google or Facebook have profited from the fact that the internet allows for exact measurement and equally exact management activities. The internet of things helps transfer this management mentality to the physical world. In our research we refer to this as high resolution management.

Inventory can be updated at minute intervals, for instance, and cars will soon be able to measure and communicate road conditions in real time. Yes, the Internet of Things is for business administration, what the ultrasound was for medicine or the microscope for biology.

So, let's wrap it up: how does the Internet of Things affect companies and entrepreneurs?

Six points are key:

First: Producers of physical goods must develop towards service providers – with all the challenges connected to that new role.

Second: Industry and Internet cultures are colliding – and we are in need for bridge builders who understand both worlds!

Third: Companies have to work together more than ever – the strategic value of developer communities and business ecosystems is enormous.

Fourth: The development of services and business models tailored to these opportunities won't happen on the drafting table. Even the Nespresso business model needed 20 years from its invention to actual market success. Experimenting in short and iterative cycles is necessary!

Fifth: It is crucial to focus on straightforward solutions at first. Construct a security system as easy to install as a light bulb! Only with a strong foundation we will be able to build complex platforms.

And sixth: We must learn how to deal with sensitive user data. How can we turn employees into high resolution managers? And who actually owns the data we have collected?

So please, watch out, the world around you does, too.

Thank you very much!

Link:

https://www.youtube.com/watch?v=kYO_PHOCjyg&feature=youtu.be