

TRANSLATED FROM ORIGINAL DUTCH ARTICLE:
UTILITY.NL/WHITE-PAPERS/INTERNET-OF-THINGS-GETTING-SMARTER

Internet of Things – It's just beginning to dawn on us that we're on the threshold of a new phenomenon. Pandora's Box of Big Data's has only just been opened and we already have wild ideas about new functionalities. Parallel to this development, it's becoming easier and cheaper to adjust sensors and actuators in both consumer products and business-to-business-products. Connecting these devices to the internet is getting easier too.

If you are capable to collect and analyze an abundance of data from this ultra-connected environment and combine into a smart functionality, then it may increase sales - maybe even more importantly – long-term customer loyalty. But although expectations are really high, it requires great skill and a new take on your own product or service to outdo your competitors. No sinecure, and the choice to ignore Internet of Things (IoT) is not an option. IoT is not new to the scene. The network for the connectivity is already in place and we've been able to steer machines and devices by remote control for some time. Smart thermostats accessible via the internet and long-distance dike surveillance have long been familiar to us. But although IoT already existed when it came into being, it has now reached a whole new level. Besides more data(sources), more analytics tools and more sensors that are easy to connect to the internet, there is also more technology that is controllable through feedback.

Know your customer

In everything around us we see potential intelligence for approaching and managing things in a smarter way. Data volume is practically unlimited. Many IoT implementations still focus on the visualizing the data for the customer, which is where we fall short, as customers want intelligence in more than just some fancy pictures. Discovering intelligence means discovering how users think about IoT systems - or rather anticipating how they should be thinking.

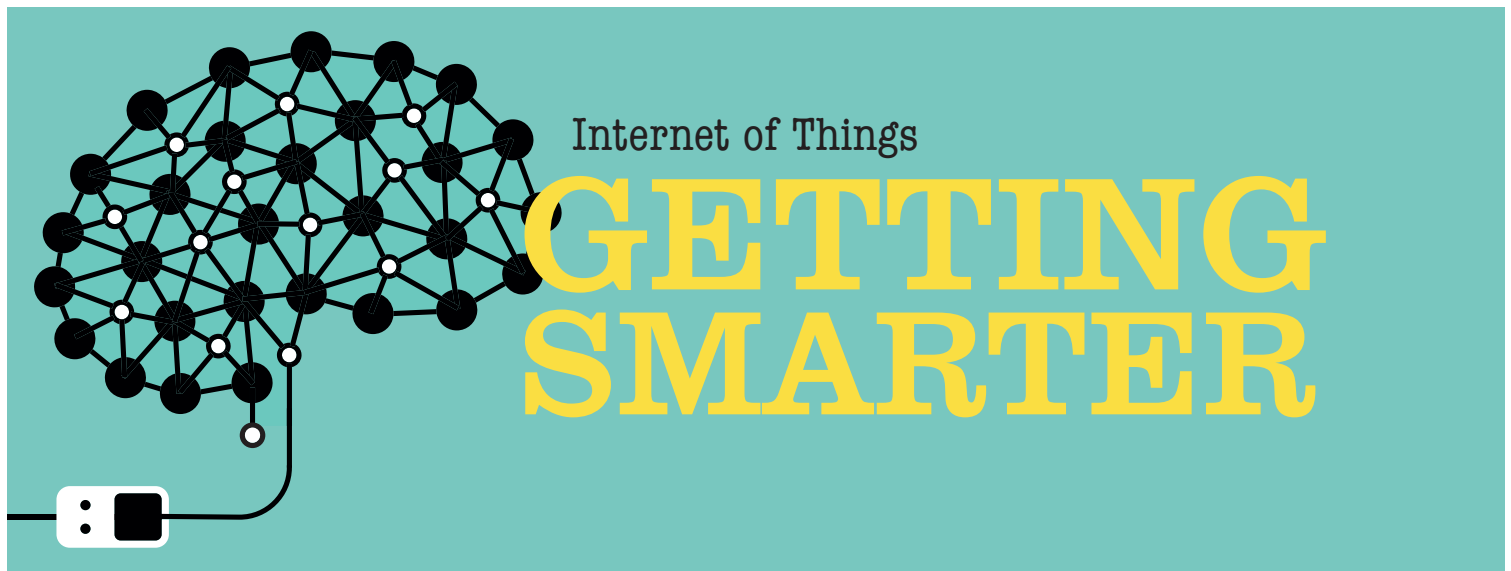
Successful IoT concepts always depend on creators with in-depth knowledge of their users, who could actually step into their business themselves. They are the ones who are able to devise a smart application for the user on the basis of the huge quantity of data. The goal is clear: a more efficient business process of the user - in other words, higher margins and greater continuity. Making IoT successful is more difficult than generally assumed. We've already mentioned a few aspects. Stepping into the customer's shoes is a must – if you want to go further than a couple of fancy pictures from the sensors. The mix of new technology, a vision of the business process and repeatedly daring to search for and sometimes discard new functionalities, requires breaking through the traditional silos in an organization.

Multidisciplinary

By definition, IoT involves multidisciplinary work; i.e. looking at applications from a marketing and product management perspective and getting them designed and implemented by electronic and hardware

engineers. The software engineer then ties all the loose ends - with embedded software close to the hardware, and the operating software on an IoT platform. And last but not least: the IT guy knows which functionalities you can and can't connect together in the cloud. There is a big change that a prominent role will be played in a company's IoT developments by R&D departments and the system bureaus operating with them. There are a few IT departments that will feel at home in the multidisciplinary teams – IT is still too often an island. The learning curve can be facilitated by making an early start on small multidisciplinary projects.

Technology is still in continual motion. Telecommunication producers are hard at work realizing the necessary bandwidth and anticipating the millions of devices that will soon be communicating with one another over their fixed or mobile network. The sensor chips still provide limited capacity for filtering data before it goes to the internet – the form factor is still under development, as the sensors have to be even smaller. And of course the communication between devices in your house has to be set up safely – otherwise the neighbor will be able to listen in and the automatically ordered descaler for the washing machine will be delivered on the wrong address. There is still a long way to go. Suggesting that IoT is still in its infancy, is opportunistic; it is not yet out of the cradle.



Platform thinking

By definition, an IoT solution is not a one-time solution. It must be able to absorb the growth in functionalities, devices, data volumes, data sources and technologies. This requires strong architecture thinking from the diverse internal disciplines. The framework needs to have strong foundations at the same time as providing direct functionality. It needs to integrate with the current environments consisting of hardware and software, and from there grow toward the applications.

There is another catch with regard to this: the IoT platform cannot be bought. What can be bought, however, are the hardware and software building blocks e.g. selectable sensors, security solutions, operating systems, connectivity and Big Data components, such as a database and a rules engine. Thinking-in-building-blocks implies an approach based on semifinished components, usually software familiar from cloud catalogs. Catalog items, such as analytic applications, data bases, middleware, storage and compute can complete the various functions within the IoT system.

Having a catalog with selected intermediates helps speed up the dialog with the business. There is no waiting for requirements, but rather direct prototyping from the catalog, parallel to creating the platform design. Speed and having something to show are top priorities.

“Suggesting that IoT is still in its infancy is opportunistic. It is not yet out of the cradle.”

Parallel

Although it won't be easy, skipping this movement is not an option. It is not a hype, but an evolution of the way business processes integrate and optimize. On a social level, the impact will be significant, and the organization will be challenged to look over its silos and take a different approach to its customers. It is a change in which thinking and acting in parallel will point us in the right direction.

Peter Schepers, entrepreneur and CEO of Itility, won the 2014 TIMMIE award for “most innovative leader”. Itility focuses on the configuration and management of the cloud environment for the enterprise, and accelerates the step to a business-focused IT company.