

Expert opinion

IoT: testing at the heart of business model validation

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In 2013 Cisco estimated that only 0.06% of connectable objects were actually connected. For GfK, 2 billion objects could be connected by 2020. In short, who can tell what IoT will really look like in the coming months or in the coming years? Types of objects to connect, use cases, technology standards, security, etc.: everything, or nearly everything can be imagined. However, years of innovation allow us to conclude with certainty that testing, in all its forms, will be central to the validation of business models.

IoT: a flow of information that up until now had nothing natural about it

In only a few years the term "connected objects" has become part of our everyday language. However, except for a few objects which are (almost) fundamentally connected by nature, such as computers or cell phones, the notion of connected object seems like an oxymoron. The first difficulty we encounter when it comes to connected objects is the unusual chain of information that derives from them.

The point is to make systems communicate with each other even when they are not natively intended to do so: physical objects, communication, storage and data-analysis systems (Big Data), or even systems for recovery of these data in the form of dashboards or feedback to the objects in question.

Security: a key element of IoT

In specific terms, these new flows of information multiply the IS's input and output points in order to allow these data exchanges. Security testing is therefore a key element of any IoT project. Personal data must be protected just like in e-health or home hospitalization. But also data that flow in the energy field or connected production chains (plant 4.0) for which a malicious intrusion could have dramatic consequences.

Testing the IoT business model

Before focusing on data security, though, it is essential to confirm that the business model is coherent and profitable. In the context of a booming market, however, companies want to move fast in order to satisfy an existing demand or to get ahead of their competitors. But in IoT, like in other fields, speed should not be confused with haste; the connected objects and related services that will manage to impose themselves are not necessarily the first on the market, but certainly those whose usage will be adapted to the demand and to the needs—whether professional or personal—of users.

Moreover, taking into account the substantial investments necessary for an IoT project (object manufacture, ecosystem, distribution, M2M infrastructures, big data tools, telecommunications, etc.), it is essential to focus first on validating the business model. For example, it is necessary to measure accurately the production costs of the connected solution, particularly communication costs which can soar very quickly according to the

volume of exchanged data. And at the same time it is necessary to ensure that customers will subscribe to this. In other words, the utility/price ratio must be attractive to users.

Test equipment necessarily multidisciplinary and agile

This is the reason why the test phase is even more crucial in IoT projects: after the technical and functional tests, this stage will make it possible to try out different uses from beginning to end, in order to validate the business models in nearly real-life conditions: objects, sensors, networks, data flow, data recovery, performance, front and back office interface, etc. IoT testing projects require multidisciplinary teams to be called upon and, above all, coordinated : the business team, of course, but also the "on-board system" team, the IT and the telecommunications teams, security specialists, data-handling experts, ergonomists, and so on.

In spite of their complexity, they must be formed as quickly as possible in order to "face up to market pressure". To face these challenges, IoT project teams have therefore no choice but to organize themselves in line with an agile model that makes it possible to imagine, experiment, and develop use cases and principal scenarios, or even to refine the choices in terms of technological solutions to be integrated, in test & learn mode.

Testing IoT: a standard, miracle solution does not exist

That is why certain software companies are starting to propose 100% integrated offers for end-to-end management of the flow of IoT information, including the on-board communications system, M2M, analytics solutions, information recovery, etc. However, these solutions are often very costly, and their return on investment remains to be proven. The IoT market is still in its infancy, and so by necessity it has to insert itself into an existing market, and no standard on each of the chain links has yet really been identified. The risk with 100% integrated solutions is to invest in, and restrict oneself to, technologies that could soon become obsolete.

In the IoT field, it is the tests of use cases that must continue to steer choices, including technological ones, in order to maintain a good level of agility before a market in demand, but still constantly changing.

About Hardis Group

Hardis Group, a digital services company and software publisher, assists its customers in the transformation of their business model, their Supply Chain and their Information system. The company helps them become more competitive and increase their operational performance, creating and integrating business, technological and digital solutions tailored to their needs and issues.

With its dual positioning, Hardis Group has developed expertise in the areas of banking, insurance and e-health, distribution (CPG and luxury goods), industry and energy, logistics and transport services. This expertise now allows it to provide global responses, in an agile approach characterized by co-construction, innovation and continuous improvement.

Since its creation in 1984, the company has built its growth on a pragmatic approach and values of efficiency and firm commitment both to its 2,500 clients and its 730 employees (25% of whom are also shareholders). In 2015, Hardis Group achieved a turnover of € 68.8 million. The Group has five offices in France: Grenoble (head office), Lyon, Paris, Lille and Nantes.

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