

# Internet of Things Investments

## Rewards, Risks and Pitfalls

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**While Internet of Things (IoT) related technologies bring the perspective of significant revenues over the next few years, this also comes with highly risky investments decisions to be made today. Long-term multi-dimensional insight is key in evaluating such investments viability, and, we argue that this is even more critical than it is usually the case, given the disruptive nature of such technologies.**

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Investments are steadily flowing into Internet of Things ecosystems as investors attempt to match market analysts' optimism about the sector. This includes the various layers of the IoT value chain, from devices to connectivity to applications and platforms. Recent examples include investments in Low Power Wide Area (LPWA) connectivity, which is considered as complementary to what mobile network operators provide in their current M2M environment. In a similar fashion, significant investments have been made into IoT security, in anticipation of the future challenges, for preventing new threats and vulnerabilities, as well as investments in a variety of IoT platforms targeting different verticals businesses.

Corporations view IoT as the next phase of growth where new business opportunities will be created similar to what happened in the Internet. On the other hand, the dynamic environment of the IoT space provides genuine opportunities for startups and to profoundly impact the status quo, where IoT applications have often stuttered because of poor business case, a complex ecosystem and complex processes that did not

allow all elements of the ecosystem to derive value. From a strategy and investment perspective, corporations are jockeying to secure and solidify their home turf against competitors and to establish new opportunities for growth. They are investing and partnering to accelerate product development, expand service offering, license technology, and acquire knowhow. Telecom operators have also been on the lookout for acquisitions in the IoT space as a way to get into adjacent markets via non-organic growth. The automotive sector has been a primary focus. Corporations are setting up funds for IoT investments as well as investing in incubators of IoT focused startups. Telecom infrastructure vendors have been ramping up their in-house development of IoT solutions as well as making strategic acquisitions. The acquisitions have focused on areas around cloud platforms and analytics solutions for IoT applications. Governments have been heavily investing in smart city frameworks, where IoT ecosystems are expected to emerge, with a focus on energy, health and transportation businesses.

We foresee the next wave of invest-

ments and acquisitions to include IoT specific solutions in different business verticals, along with areas related to infrastructure development. Chipset and subsystem IoT providers are faced with the most significant challenges in terms of where to focus investments given the fragmented nature of the IoT connectivity market. The leading vendors are likely to monitor and hedge the market via their venture capital investment arms. Venture Capitalists (VC) have also been moving into the IoT with over \$1.1 billion in funding in 2013 and significant growth in 2014. Some venture capital firms have had IoT investments as a priority over the last few years, and have been leading the latest rounds in this space. Health and wellness, location services, and energy are the highest investment sectors garnering over 50% of total VC investments. In the last year there has been a notable increase in Angel investor deal flow for startups related to IoT. Activities are relatively high at the seed stage with an almost even distribution between series A, B, and C. There is also a relatively high percentage of strategic investors reflecting the need of the IoT market for large enterprises creating

a market for IoT related products and services.

Machine-to-machine mobile virtual network operators (MVNOs) today account for a small portion of all MVNOs. The development of IoT will progressively lead to strong growth of IoT-centric MVNOs, targeting specific industry verticals. This is a further evolution of the data MVNO model. Various startup MVNO operators are in early launch stages while the large Internet players are at various stages of validation of these IoT centric MVNO technologies and business models. The outlook for investment environment in IoT continues to be promising in 2015 as several of the trends that emerged over the last couple of years will further drive interest and value in this wide ecosystem. Some of these trends include the alliances established to facilitate interoperability between IoT devices (e.g. the AllSeen Alliance and the Open Internet Consortium, and most recently GSMA focused on LPWA).

With all these investments flowing into the IoT space, one should raise the pertinent question of return on investments. As we have witnessed in the past, when new enabling technologies rapidly emerge, returns on investments are far from certain. A number of things need to be weighed carefully as the ecosystems develop and mature. The risk of evolving these technologies past the early adopter phase into broader markets acceptance and large-scale

commercial viability is a major challenge to overcome. Sustaining the newly developed businesses in face of the reactive nature of incumbent industries aiming at slowing momentum down, or even pushing back on adoption has to be dealt with. The risk of seeing large players taking over these newly developed technologies and locking in deployments in the market tends to be a common occurrence.

In the IoT case, circa 2015, all of these dimensions are currently in motion. The newly initiated LPWA standardization efforts, while a good evolution in itself, brings in challenges that are inherent to standardization in the wireless space, by providing sufficient time for established players in the chipset, systems and service provider space to get to this market and attempt to dominate it. The level of fragmentation in the IoT platform and applications space, will likely require a rapid consolidation, where few winners will likely take it all, the way it is generally the case is with internet based services deployment models. Finally, and probably the most important angle, enticing IoT end users to aggressively adopt this new wave of applications is key, and this will only be the case if such applications provide a clear response to their business needs with a crisp underlying business case. So yes, investments in IoT technologies are definitely a welcome development, but returns on such investments are likely to be more tricky than usual. ■

#### L'AUTEUR



**Dr. Riad Hartani** has spent the last two decades contributing to the development of Internet and Mobile technologies, mostly out of

the Silicon Valley as a hub, building multiple technology startups, advising on technology investments and rolling out innovative technologies in most regions of the world. He has most recently co-founded a global technology and investments advisory firm, Xona Partners, with a novel incubation and spin-in model as a way to foster disruptive innovation. Previously, he has been in the leadership team of various startups (N42, Wichorus, Anagran, Caspian) in the San Francisco bay area, and lead advanced research teams in prestigious R&D labs in the US, Canada, France, Korea and Japan. He holds two Engineering degrees and a Master degree (applied mathematics and systems/computer engineering) with highest distinction, was awarded a Doctorate in Computer Science (Artificial Intelligence) with highest honors from the University of Paris, was a doctoral and post-doctoral fellow at University of California, Berkeley and completed the Executive Education in Business at Stanford Graduate School of Business.