How Video and Vidyo Can Drive Value for IoT
August 4, 2014

Vidyo, a video collaboration platform provider, announced a few weeks ago that it received a $20M round of funding. As we are M2M and IoT analysts, companies in this space do not normally fall on our radar screen. However, Vidyo’s press release caught our attention because the company spoke at length about the opportunity in IoT, specifically video in IoT. Vidyo emphasized that funding is less about cash for ongoing operations and more about pursuing new opportunities, including new opportunities to be a video engine in IoT. Vidyo will not comment on valuation, but in our opinion IoT could have a meaningful impact in raising the firm’s multiples.

Though video is very relevant to IoT (surveillance is often cited as an application), it is not necessarily a top-of-mind issue for many players in the industry; the issue comes up rarely in our client and conference conversations. This is primarily because IoT has been largely a low bandwidth, low monthly ARPC (average revenue per connection) phenomenon. In fact, these are the drawbacks often cited by of those still skeptical of the IoT opportunity. But IoT is complex, and there is more to this than meets the eye. We think Vidyo is onto something, and, if its solution is as advertised, it could very well have a meaningful hand in disrupting the market and making video more prevalent in IoT.

VIDEO IS A REVENUE BOOSTER

First, it is important to recognize that there are early use cases proving the relevance of video in IoT. In our conversations with M2M service providers, applications such as digital signage and state-of-the-art connected retail kiosks are popular examples of video finding its way into IoT. In fact, digital signage (billboards using dynamic video screens) represent an IoT use case that is a good counterpoint to the low bandwidth and low monthly ARPC view. Several M2M service providers have noted that digital signage services can deliver monthly ARPCs of US$100+. Another example, connected retail kiosks, sees newer systems being rolled out with more sophisticated color video screens—such as those by Red Box in the US, a kiosk-based DVD rental service. These require a broadband connection and yield monthly ARPCs more in line with traditional wholesale wireless broadband data services—$15 to $30 a month per kiosk—much higher than the sub-US$10 ARPCs typical for IoT services.

The key point here is that video is making its way into IoT, and its requirements are yielding the all-important impact of much higher ARPCs for M2M service providers. These early use cases of video in IoT can be enhanced by incorporating interactive video communications. Imagine a Red Box kiosk with real-time video calling capabilities that would allow a customer to talk to a human service agent for advice on what movie to pick. The traditional automated teller machine (ATM) is already seeing such upgrades as financial institutions look to better serve customers and add a personal touch to sell more services. The idea is to incorporate the human element back into the interactions without the cost burden of physical human presence. Another IoT vertical segment, healthcare, has had a long history of solution developers looking to incorporate video communications into hardware and services; for example, connected medical diagnostic devices enhance the telemedicine concept.
Of course, these examples are only a niche in IoT today, and their high ARPCs have only modestly increased average monthly M2M ARPC levels, which remain well below traditional voice and data ARPU. Based on guidance from global M2M service providers, it is clear that these video use cases are a minority. These early use cases do, however, point to the potential of video in enhancing IoT’s value proposition and how the inclusion of video in a solution, when relevant, raises the ARPC potential. **Video offers an important upside in IoT.**

**DISRUPTIONS NEEDED!**

**Cost is a primary barrier to more video in IoT today.** Incorporating video into an IoT solution naturally raises connected device or hardware costs, as well as operating and service costs due to the higher bandwidth capacity required. Other important **barriers to consider are scale and quality.** IoT implies a level of connected devices never before seen. Systems and solutions developed must be effectively and efficiently scalable to unprecedented levels. Quality is also essential to solution value and the user experience. Doctors will be highly reluctant to conduct a remote medical diagnosis on a low resolution system. Automated video analytics systems being tested today also benefit from higher resolution data to help maximize their ability to understand the situations and data being captured by connected video camera systems.

What gives IoT hope is the constant innovation and development of connected devices and networks. LTE modules (costs are expected to drop below $50), video screens (televisions get bigger and cheaper), video cameras, and processors all have declining costs. LTE networks are proliferating and beginning to see the scale that drives down the cost of delivering each megabyte of wireless broadband data. Looking ahead, 5G promises to deliver more bandwidth and further improve the economics the network.

**THE VIDOY FACTOR**

These factors, declining device and network costs, form the trajectory with which we can expect video to spread in IoT. What makes a firm like Vidyo interesting is that it offers another factor that can help address cost and other barriers to video adoption. **Vidyo’s solution** optimizes the video traffic stream itself, promising to **significantly lower the cost of its transmission.** At the same time, it makes the **video more adaptable** to varying connectivity conditions and **maximizes quality.** Vidyo also provides APIs to ease integration of video into developers’ solution efforts. IoT application and device diversity makes APIs essential to speeding the solution development process. What especially caught our attention is Vidyo’s assertion of a 10X cost reduction, or prices “similar to a voice call”—accomplished via the optimization of the video traffic stream.

**Introducing the Vidyo factor**—optimizing the video traffic stream to lower transmission costs—into the mix of declining hardware and network costs can **help change the trajectory for video adoption in IoT.** Such disruptions in the costs of delivering video are needed (and certainly need to be vetted further): this influx of attention, real funding, and innovation talent into the IoT ecosystem make the industry not only interesting, but also more promising. (For more related information, please see our September 2013 CRS note *M2M Ecosystem: Apple Alumni and Innovation in M2M*).
BOTTOM LINE

The IoT industry is built on a vast ecosystem of solution developers. If the economics, scalability, and quality of video can be significantly improved—enter Vidyo—developers need to know about it so they can start designing and architecting solutions and services with video in mind.

One of the risks of a world of increasingly connected “things” is a lack of human connection. Besides incorporating human interaction, video communication in IoT can yield more robust ARPCs and thereby a stronger business case for IoT!

As always, we welcome your feedback.

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