
How IoT providers can learn from the cloud

July 2018

Tom Rebbeck

IoT revenue is growing for most players, but frustration remains as growth rates are slower than expected. There is a sense that IoT is failing to deliver against the (extremely high) bar that was set.

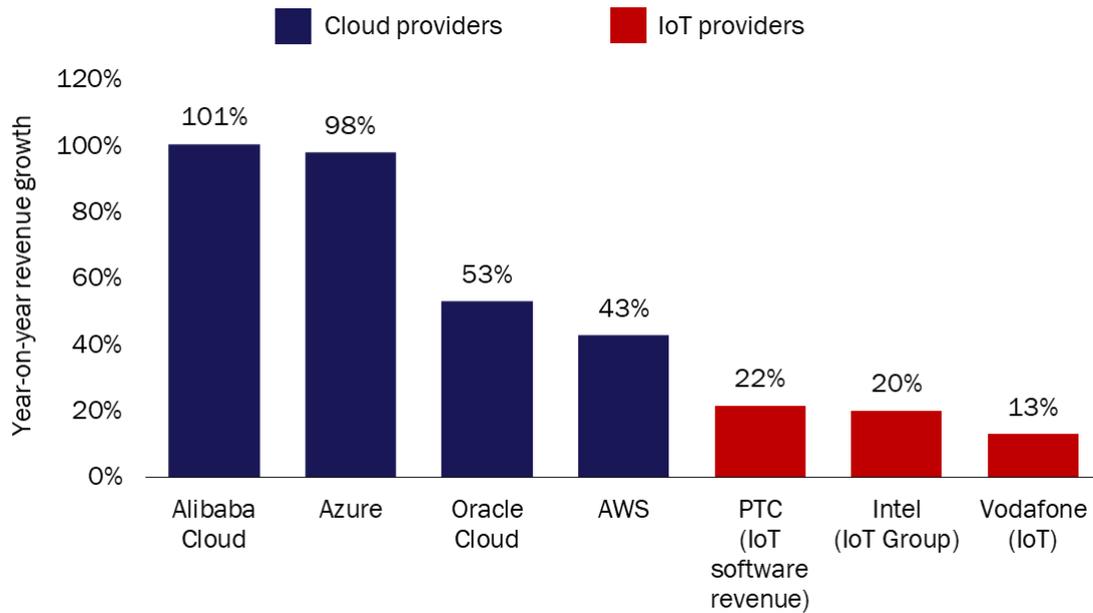
An obvious comparison for IoT services is cloud services. The major cloud players have high revenue and are growing quickly (with typical growth rates of over 50% per year). IoT revenue is small and growing (relatively) slowly. Intel, the company that reports the largest IoT revenue, generated USD879 million from IoT in 4Q 2017; AWS earned nearly six times more from its cloud services in the same quarter.

IoT adoption is a more fundamental change than the shift to cloud services, but IoT providers should look to learn some lessons from the growth in the usage of cloud services, for example by enabling more automation, simplifying procurement and doing more to share good practices.

Cloud providers are growing much faster than IoT companies

The chart in Figure 1 shows the revenue growth rates of cloud and IoT providers in 2017 compared to those in 2016. AWS (easily the largest cloud player) reported the slowest rate of growth of 43% year-on-year. For IoT, we show the revenue of three players, the fastest growing of which is PTC with a revenue growth rate of 22% year-on-year.

Figure 1: Year-on-year revenue growth rates of selected cloud and IoT players, 2017 versus 2016¹



Source: Analysys Mason, 2018

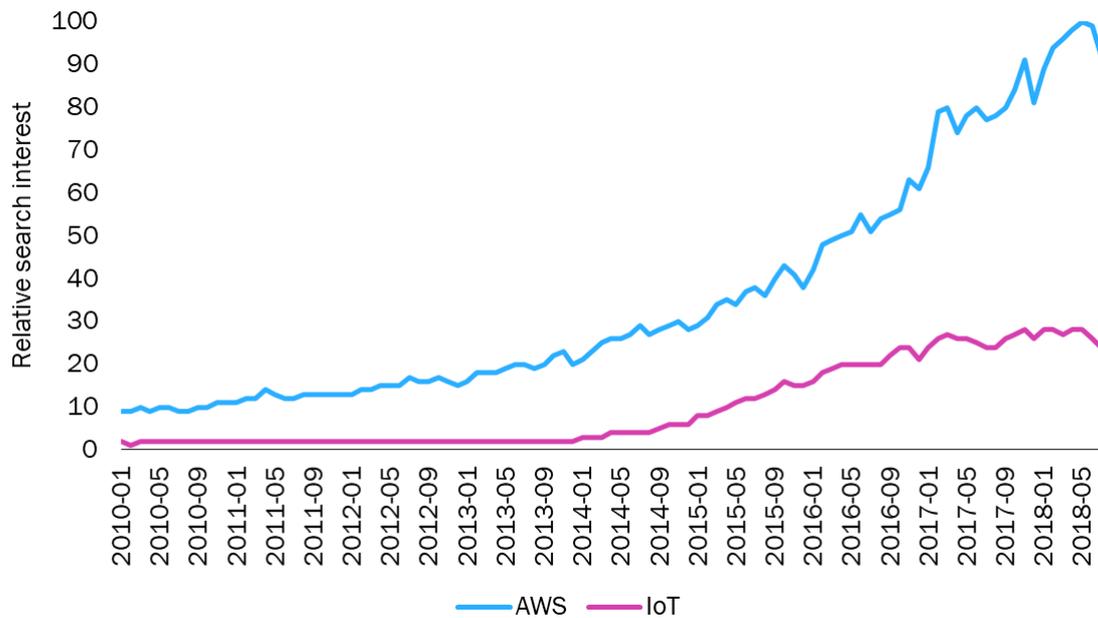
Cloud services are helped by a longer history

Cloud services have been around for longer than IoT services (AWS was launched in 2006), and this partly explains the higher revenue growth of the former. Interest in cloud services (measured by taking AWS as a proxy) is far higher than that in IoT services (Figure 2). The number of Google searches for IoT is currently around the level of that for AWS in 2Q 2014. The levels of awareness and interest in IoT in many enterprises, especially smaller ones, is [surprisingly low](#).

The longer history of cloud services confers advantages other than awareness. Many lessons from cloud migrations are transferrable, and a stable market structure helps to transfer this knowledge. The number of key players in the cloud domain is small (Google, Microsoft and especially AWS), but they are supported by a huge partner network. This network also provided an initial established route to market. For example, many AWS partners supplied the legacy IT systems that cloud services supersede.

IoT does not have these benefits. It has a fragmented mix of technologies and multiple vendors. These vendors often vie to take on the role of service provider, which complicates collaboration, reduces the incentives to share knowledge and confuses potential buyers.

¹ Data for Azure is from 4Q 2017 versus 4Q 2016.

Figure 2: Google Trends data for AWS and IoT since 2010²

Source: Google Trends, 2018

Unlike IoT services, cloud services offer simple ways to reduce cost

The move to the cloud can involve extensive changes to an application or process. However, at its simplest, an enterprise can simply ‘lift and shift’ an existing application onto the cloud and expect a significant reduction in costs (30% according to AWS’s Stephen Orban³). For enterprises, this transfer will cause minimal disruption.

There is no analogy to this when migrating to IoT services. Connecting devices will add a new process or replace an existing one. The replacement of an existing process with its IoT counterpart will often involve replacing labour, which adds complexity.

IoT services also have more elements than cloud services (indeed, the cloud can be one of these components). Consider a simple application like smart parking, where a sensor reports on the status of a parking space. As well as the application, sensors will need to be bought, installed and connected. Many of these steps will involve teams beyond the IT department, creating added complexity.

Contracts for legacy IT systems expire, creating a point at which to explore options. For example, the end of a data centre lease provides an obvious point at which to move to the cloud. IoT solutions do not typically have a similar trigger.

² “Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term.” Explanation and data taken from Google Trends (<https://www.google.com/trends>).

³ Page 13, Ahead in the Cloud, Stephen Orban.

The implication is that IoT revenue growth may be lower, but will last longer, than revenue growth in cloud services. The migration of existing applications to the cloud is a finite process. Longer-term growth will depend on new applications being created. IoT may be different though. All of the growth in IoT comes from new or changed processes, some of which may have a greater impact than migration to the cloud.

IoT providers should learn from cloud services

IoT solutions providers can apply lessons learnt from cloud services, despite the differences between the worlds of cloud and IoT.

- **Aggressively move to self-service.** The default for cloud services is an API that can be used by a developer. IoT services are changing, partly driven by cloud players such as AWS and Google, but the default for many services is manual configuration. While each IoT project will be different, many aspects can be standardised and made more accessible. IoT will never reach billions of devices if each aspect of a service relies on manual processes.
- **Simplify procurement.** The simplification of procurement comes hand-in-hand with self-service. Co-location services were bought through negotiated deals and tailored contracts. IaaS is often bought from a list price, which is typically low, with a standardised ‘take it or leave it’ contract. Few IoT services work that way today. For example, we are aware of only 19 MNOs or MVNOs with standard IoT connectivity pricing (and some of these are eye-wateringly expensive).
- **Focus on sharing learnings.** Companies that adopt IoT services may see the benefits (such as lower costs) as a competitive advantage and may not want to advertise their impact. It is therefore up to providers to do all that they can to share learnings. Cloud players do this already, with video tutorials, extensive documentation, developer days and accreditation schemes. AWS’s assistance extends beyond developers. It has a Cloud Economics Group that helps potential customers to understand the business case for cloud services by identifying the likely costs and savings.

Comparing two markets as different as cloud and IoT has limitations, given the massive differences between them. However, lessons from the cloud can be applied to IoT services, and providers may need to learn from these if they are to accelerate growth.