



How to Monetize IoT: An Aeris Whitepaper:

WHITEPAPER



IN THIS PAPER:

Being able to effectively scale, improve margins, and monetize every aspect of your IoT operations requires a robust underlying platform, one built to withstand the intense rigors of smart device data generation. Aeris can deliver a customized platform that turns every device and sensor into a profit center.

HOW TO MONETIZE IoT

Significant cost savings, unparalleled customer insight, minimal infrastructure requirements, and numerous other factors have made the Internet of Things (IoT) the next great paradigm shift. But technology advances do not necessarily translate into profits, as the dot com era clearly demonstrated.

There already are hundreds of IoT companies that have filed for bankruptcy or gone out of business altogether. In fact, a survey by consultancy Capgemini found 70% of organizations don't generate any service revenues from their IoT solutions — despite the fact that global management consultant McKinsey & Company estimates IoT, as an industry, will generate between \$4 and \$11 trillion by 2025.

The question thus becomes how can companies actually make a profit with IoT innovations?

This white paper will examine what monetization for IoT means, how companies must rethink their business models to compete in the interconnected era, and how Aeris can deliver a customized platform that turns every device and sensor into a profit center.

Note: For the purposes here, 'monetization' is defined as being the ability to generate profit versus simply extracting efficiencies from operations to enhance profit margins.



GET READY FOR A DRAMATIC TRANSITION

One of the reasons companies and organizations have not monetized their IoT investment is due to their focus on efficiencies, automating as many processes as possible in order to save money and enhance productivity.

This is a logical approach given shifting processes to IoT-enabled devices can save upwards of 60% in costs within the first year, and the results are both measurable and evident. But extracting operational efficiencies to enhance return on investment (ROI) can only go so far. The real value of IoT to organizations lies in how it can fundamentally change their interaction with customers, and that requires switching from a capital expenditure (CAPEX) to a primarily operating expense (OPEX) business model.

Monetization based on OPEX starts by rethinking the fundamental corporate business model, regardless of industry. In the traditional way of doing business — selling unconnected products — the enterprise focused on features and benefits. In a connected, IoT-enabled world, managers will be more focused on the utilization of their products, as this is where

they will generate the most revenue. Put simply, the products become the strategic assets. This rethink also is a psychological one — companies have to shift from the belief that customers must always buy a product to one in which 'renting' is the norm.

Take one of the most traditional old-line industries today — vehicle manufacturing. Why spend valuable CAPEX resources to design and build cars (on average, it costs more than \$2 billion to develop a new vehicle) when you can convert the business model to OPEX and realize recurring revenue by charging for usage? General Motors, a traditional CAPEX-intensive company in this industry, invested \$500 million in ride-sharing service Lyft for this reason. In addition, companies can charge subscriptions for infotainment, insurance, maintenance, and more, without ever having to build anything.

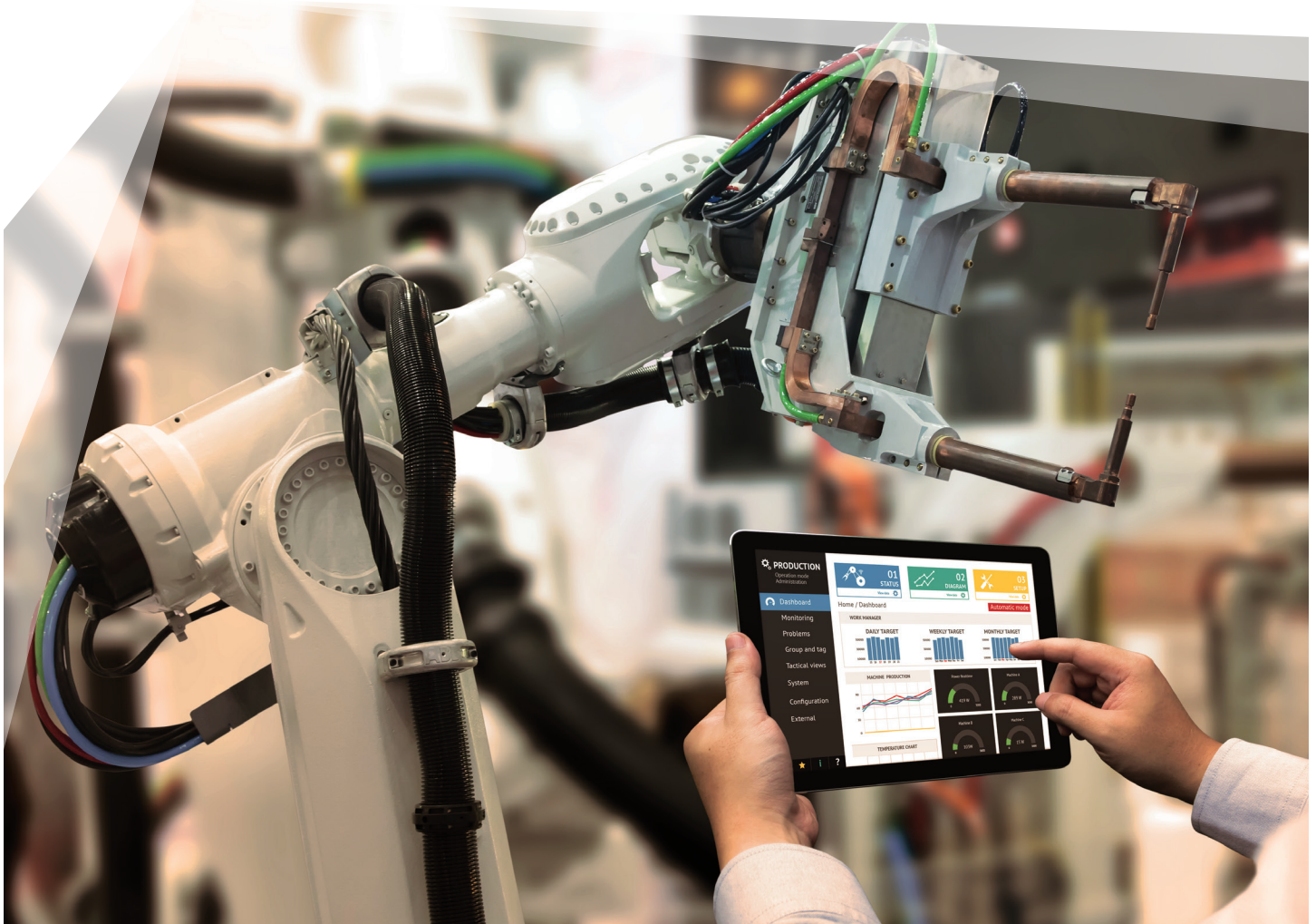
CREATING MULTIPLE REVENUE STREAMS

Companies and stakeholders, responsible for making quarterly financial goals, also need to realign how they actually are defining profit. IoT business models cannot be measured by the same metrics as consumer voice and data services. In fact, IoT typically appears as a horrible investment if viewed in a traditional manner.

For instance, the value of a single IoT-enabled connection can vary anywhere from \$50/month to a few dollars per year. Thus, the monthly average revenue per connection (ARPC) for IoT deployments is far lower than the average revenue per user (ARPU) for consumer services — and this can look devastating on a balance sheet.

IoT as a profit center needs to be judged separately and on its own merits. The good news is, due to their nature, IoT devices are not subject to the same constraints as is a manufactured product. While there is a definite limit to the number of people who can be sold a mobile phone, for example, there is no limit to the number of devices that can be manufactured and deployed when

human interaction is not required for use. Even if the ARPC is low, revenue can be high due to the ubiquity of the devices. Thus, IoT as a profit center must be judged on scale and margins. The more cost-effective devices deployed, the better the balance sheet looks. And once the infrastructure is in place, there are unlimited opportunities for up-sells, dramatically improving ARPC.





UNDERSTAND WHAT YOU HAVE (AND BE AMAZED)

You've probably seen the popular Antiques Roadshow series where people discover the 'junk' in their house is worth a lot of money. This is actually a key to understanding IoT monetization, too. Corporate management is accustomed to certain definitions for assets, which includes things like sensors.

Stakeholders naturally assume a smart device is just another advanced device, doing its intended purpose only, and that is a mistake — similar to a homeowner thinking the cheap flowerpot in her attic is just a cheap flowerpot. But with smart-enabled IoT devices and sensors gathering immense amounts of information by the second, there's an incredible amount of profit inadvertently being left on the table. That data is worth a lot of money.

Management needs to understand the function, capability, and locations of sensors within the company's ecosystem. They also need to think outside the box, employing people who analyze data/device environments and think, "What if?"

Although not strictly IoT, one example of this type of approach comes from Google, the world's largest search engine. Thanks to its management thinking outside the box, the company now has entered the fashion forecasting industry, a small but potentially lucrative niche. They took the often-unstructured data normally collected and applied it to a radically new (for the company) market.

And that brings up one of the greatest, yet overlooked, benefits of IoT. The infrastructure already is in place — with long-term contracts that guarantee set costs. Therefore, any additional services created essentially are free to deploy since the data is already there. There's no need for further investment, leaving

lack of imagination as the only limiting factor. Of course, new markets and services sometimes are created serendipitously. The data gathered from a smart sprinkler system could enable a company to easily branch out into complete lawn care, pest control, and even home security. And because many customers prefer turnkey solutions, marketing the new services to an existing base is simple and remarkably profitable. Plus, the company can package and resell information (observing privacy laws) to other lawn care businesses around the world. In fact, when it comes to data, one organization, TERBINE, is creating a commodities exchange exclusively for IoT data.



DEPARTMENTS MUST WORK AS A WHOLE, ALL THE TIME

In traditional business models, most departments work independently and are siloed from one another. Only if there is a specific need will interdepartmental cooperation occur, and even then it's usually with departments that have commonalities, such as sales and marketing.

As with other aspects of corporate infrastructure, IoT radically changes this business model, too. Sensors and devices gather so much actionable information on a continual basis that all departments — from engineering to finance — must be intimately involved in the process. Departments can no longer operate in their own isolated worlds, especially if companies intend on operating in the fierce global marketplace.

For example, suppose a new smart service is launched. The data generated is sent to:

- ◇ Engineering, so they can refine the service offerings
- ◇ Marketing, so they can know what is working and not working from an end-user perspective, plus how to define/refine up-sells
- ◇ Finance (including billing), so they can ensure devices are billing correctly and the company is receiving proper payment for services delivered
- ◇ Operations, so they can monitor the entire infrastructure closely to guarantee uptime
- ◇ And all other departments within the company, so they can operate from the same page on all business processes

Each department now is part of an interconnected ecosystem that demands that information is shared, across all divisions. This enables the enterprise to function as a cohesive unit that can respond to market changes and other challenges with unparalleled knowledge and insight. Initiatives can be implemented immediately — with real-time monitoring — and altered on-the-fly with all stakeholders on board at the same time. The end result is incredible agility and a competitive edge in any business environment.

WHERE DO YOU START? WITH THE RIGHT PLATFORM — AERIS

Being able to effectively scale, improve margins, and monetize every aspect of your IoT operations requires a robust underlying platform, one built to withstand the intense rigors of smart device data generation.

As a pioneer and leader in IoT, Aeris has learned a lot about how customers want to consume services, how companies can monetize that demand, and the challenges created. Aeris offers a platform-centric approach that enables organizations to access information holistically or in modular form, empowering them to make logical decisions with more real-time information at hand.

Why is Aeris different? Many platforms are based on an asset in the data center, such as a connectivity module or device. The Aeris IoT Services platform focuses on how to extract more out of the asset, whether it's a fleet vehicle or a probe or a sensor, and make its data readily available across various enterprise processes, a mission-critical component of monetizing IoT. Achieving this requires incorporating a comprehensive range of capabilities, involving rating, access management, maintenance, routing, alerting, security, integration, and location — all working in unison to create a powerful competitive edge.

There are other advantages to having Aeris as an IoT technology partner. Our solutions are designed from the ground up exclusively for the rigors of IoT, not retrofitted from an existing consumer system. You can achieve a faster time-to-market thanks to highly efficient device certification and deployment processes, shortened development cycles, and simpler hardware integration. And for companies that don't have the time, resources, or budgets to develop their own infrastructure, Aeris also offers a variety of customized, turnkey IoT solutions for enterprises.

Is your company considering global expansion? Aeris offers a single SIM that works in more than 180 countries, in addition to offering unparalleled local knowledge wherever your opportunities take you. That translates to larger profits, faster. There's even a single portal for managing every device — one login for billing, support, APIs, VPN, and more. And everything is backed by our top-rated customer support teams dedicated to your success.



SUMMARY

IoT offers companies significant advances in efficiencies and overall productivity, but such benefits are not conducive to long-term profitability and growth. Monetizing IoT requires a new way of thinking about how business does business, and that can be a struggle for organizations accustomed to running on a traditional paradigm. But with IoT quickly dominating every industry — and the low barriers to entry encouraging endless competition — companies of all sizes need to take decisive action now in order to protect future revenue:

- ◇ Move to an OPEX model where products become services that require minimal capital outlay.
- ◇ Rethink how profit and revenue are determined. Switch from an ARPU model to an ARPC one, otherwise IoT will appear as a terrible investment.
- ◇ Ensure the entire company, from finance to engineering to marketing, is an integral part of the IoT deployment. The immense amounts of data collected affect every aspect of the enterprise.
- ◇ Educate stakeholders on what IoT really involves. Sensors no longer work in isolation, as they offer valuable insight well beyond their assigned functions.
- ◇ Data literally is a goldmine. Train (and hire) stakeholders to think outside the box for new market opportunities derived from the same data already being collected.



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ABOUT AERIS:

Aeris is a technology partner with a proven history of helping companies unlock value through IoT. For more than a decade, we've powered critical projects for some of the most demanding customers of IoT services today. We strive to fundamentally improve their businesses by dramatically reducing costs, accelerating time-to-market, and enabling new revenue streams. Built from the ground up for IoT and road tested at scale, Aeris IoT Services are based on the broadest technology stack in the industry, spanning connectivity up to vertical solutions. As veterans of the industry, we know that implementing an IoT solution can be complex, and we pride ourselves on making it simpler.

Visit www.aeris.com or follow us on Twitter [@AerisM2M](https://twitter.com/AerisM2M) to learn how we can inspire you to create new business models and to participate in the revolution of the Internet of Things.

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