

Build IoT Embedded Innovative Products For Better Results

A brief overview on how companies can transition from consuming IoT to providing IoT solutions to their customers.

Background

Organizations building applications in their pursuit of the Internet of Things (IoT) fall into two distinct categories:

- **Companies producing IoT products that benefit their customers**
- **Companies creating IoT solutions for internal use**

This overview examines the criteria impacting each organizational category when designing business models, choosing the correct technology, and measuring success. We'll also look at a model that combines both.

Being An IoT Producer

In the first section, let's discuss the IoT producer. At Losant, we define IoT producers as companies that produce IoT products or applications as integral parts of the things they build. IoT producers use their IoT product as a recurring revenue model.

We've worked with IoT producers for many years, giving us unique insights into what it takes to bring these types of applications to market. Many organizations, especially industrial manufacturers, overlook external, customer-facing IoT products or services as an option when pursuing the Internet of Things. But that's a missed opportunity. Delivering an IoT product to your customers is a great way to extend the value of existing product lines. Regardless of industry, IoT products are almost exclusively sold as subscription services, which allows the producing organization to adopt new business models and recurring revenue sources.

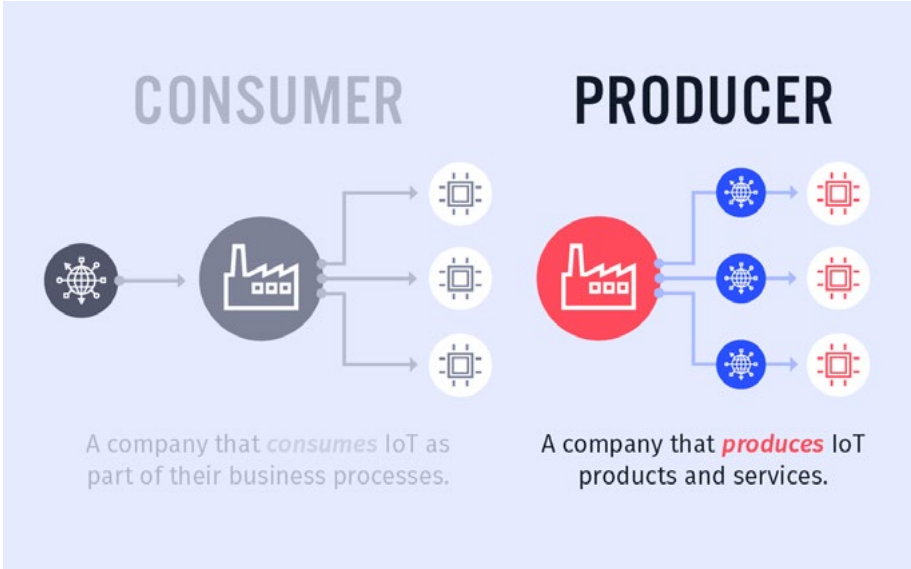
The return on investment (ROI) for an IoT producer is primarily measured by new revenue generation. There also may be a variety of intangible benefits as well, including competitive differentiation and improved customer satisfaction.

One of our customers, Magchecks Ltd., is a notable example of this. The company built sensors into the containers it builds for explosives to perform a variety of status checks, such as "door open too long" and tamper attempts.

Externally facing IoT products are consumed by users external to the provider organization, -- typically that organization's customers. Because these services are customer-facing and the customers are likely paying money for those services, the expectation for quality is high. While off-the-shelf dashboards and business intelligence (BI) tools may solve internal needs, they typically cannot deliver the flexibility required to build the highly customized and branded experience required to meet customer expectations.

The tenancy model for a customer-facing IoT product is far more complicated than an internal application. Customer-facing IoT products are multi-tenant, where each tenant is represented by one of the producer's customers. A multi-tenant application requires additional security, with device and data isolation, so one tenant can never see information owned by any other tenant.

In developing customer-facing IoT products, most of the data presentation and multi-tenant complexity lies within the producing organization's chosen IoT platform. Today, however, few IoT platforms are designed to deliver multi-tenant, customer-facing applications. In fact, nearly all IoT platforms are designed to solve only internally facing problems. Therefore, organizations that want to generate revenue with the IoT applications should ensure their platform of choice can easily deliver customer-facing applications that include multi-tenancy protections. The Losant solution we've created for producers is called Experiences, which is designed to deliver highly customized and multi-tenant IoT products to any number of end users and customers.



Losant Experiences help companies like NimbeLink quickly and easily view and monitor their IoT assets in a clean and easy-to-navigate graphic visual environment. NimbeLink has integrated Experiences with its proprietary cloud platform that collects and stores data for its asset-tracking solution.

Cost-Saving IoT Applications Easily Built With One Platform

For this section, let's take a closer look at the IoT consumer model, which is how we refer to companies that consume IoT as part of their own internal business processes. For these companies, the IoT applications they use help the company better optimize its own internal business processes and cut costs. The solutions they use are typically either developed internally or by an outside IoT producer. In this discussion, I will focus exclusively on IoT consumers that develop their own internal applications.

When we think about industrial IoT, smart manufacturing, and smart environments, in most cases the internal applications are created for and by the IoT consumers – the companies themselves. The return on investment (ROI) for IoT consumers includes reduced risk, reduced cost, improved efficiency, and resource optimization.

For a good example of how one company is making this IoT model work, read our Clark Construction case study here, which looks at a construction company's efforts to mitigate water damage on its job sites.

In the IoT consumer model, the only users are employees so internal IoT applications are much more flexible when it comes to data presentation.

Off-the-shelf dashboards and business intelligence (BI) tools can generally suffice in meeting the data visualization requirements. In fact, the user interface accounts for one of the primary differences when compared with a customer-facing IoT product created by an IoT producer. When providing an IoT product to customers, the customer expects a user interface that is tailored to the use case and the problem being solved.

Internal IoT applications also have a simplified tenancy model when compared to external IoT products since there is usually only one tenant -- the organization itself. That single tenant may have many users (employees) with various levels of access, but a single-tenant architecture is much easier to implement.

Because internal IoT applications have an easier tenancy model and more flexible data visualization requirements, there are more choices when it comes to the IoT platform that will function as the application's software foundation. Organizations moving forward with this model should evaluate platforms in terms of ease of use, industrial connectors, edge computing, and which one will get their solutions into production the fastest.

At Losant, we took a low-code approach to edge computing, data visualization, and business intelligence. Our workflows and dashboards are drag-and-drop, which greatly reduces the complexity and increases the agility for application development. This allows even non-developers within an organization to successfully deliver internally facing applications.



IoT Producer and Consumer Offer Applications with One Platform

Lots of organizations approach the IoT arena with both creating revenues and saving money in mind, and it is especially true for industrial manufacturers. Asset tracking and asset monitoring, for example, yield value for both the manufacturer and the manufacturer's customers.

In some cases, companies already have an internal solution in production and have developed expertise that operationalizes their technology. Technology and expertise developed for an internal solution rarely translates directly to a customer-facing IoT product, however. That's because there are major differences between the two approaches:

- *Single tenancy vs. multi-tenancy*
- *Highly customized and branded end-user experiences*
- *Differences in business model (new revenue vs. cost savings)*

Many organizations waste a significant amount of time and money attempting to apply the same technology they've successfully used in their internal application to a customer-facing application. These two models have different goals, so cannot be treated the same. Understanding the differences between the two types of IoT applications can help the organization properly evaluate technology so that it best meets the needs of both the organization and its customers.

At Losant, our IoT platform helps companies of all sizes develop and bring to market both internal IoT solutions and external, customer-facing IoT products and services. Please contact us to learn more about our platform and how it might help your organization develop the IoT solutions that you or your customers require.

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