What's Your Secret Sauce?

Business Value and Monetization for IoT

SpinDance

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...new technology, an old problem, and a big idea turn into an innovation.
-Dean Kamen

Your Secret Sauce is the one thing your organization does, and does well, that no one else is doing. It's what builds your unique value in the marketplace.

For companies that have already found their 'thing' and are wildly successful, congratulations!

But, for companies that are entering the IoT world, how will you make it happen? How will you find your competitive differentiator, add value to your business, and increase revenue… especially in IoT?

One of the ways to differentiate yourself in the IoT crowd is through innovation.

WHAT IS INNOVATION?

innovation
(noun)
in·no·va·tion | \ ˌi-nə-ˈvā-shən \
Essential Meaning of *innovation*
1: a new idea, device, or method
//She is responsible for many *innovations* in her field.
//the latest *innovation* in computer technology
2: the act or process of introducing new ideas, devices, or methods
//Through technology and *innovation*, they found ways to get better results with less work.
//the rapid pace of technological *innovation*

(Source: merriam-webster.com)

While the definition of innovation is true, it's still very hard to define what it truly *IS*. After all, what good is IoT innovation if it's just 'cool' but doesn't help humanity, make life better or easier, or is too cost-prohibitive to implement?

At SpinDance, we use a few tools to help us focus on what IoT innovation truly is and whether an idea, product or service is truly worth pursuing.

DEFINING IOT - THE INTERNET OF THINGS

There are 3 Fundamental Building Blocks of IoT.

The first building block is **Physical Devices -** If you don't have a 'thing' you can't have IoT! Your 'thing' can take many different forms. It could be a consumer electronics device, a car, or a wearable such as a FitBit. It could be smart manufacturing, smart buildings, or smart infrastructure.

Command & Control: These are devices to which we can send commands through an internet connection. It must be able to publish its current state, receive an issued command, execute or reject the command, evaluate the result, and either retry or fail.

Whatever form it takes, it must be some sort of physical device.

The second block is **Internet Connectivity -** This is how your 'thing' talks to the world. Forms of connection can be Wifi, LoRa, Bluetooth, Cellular, or wired connection. It just needs to have the ability to connect to the internet.
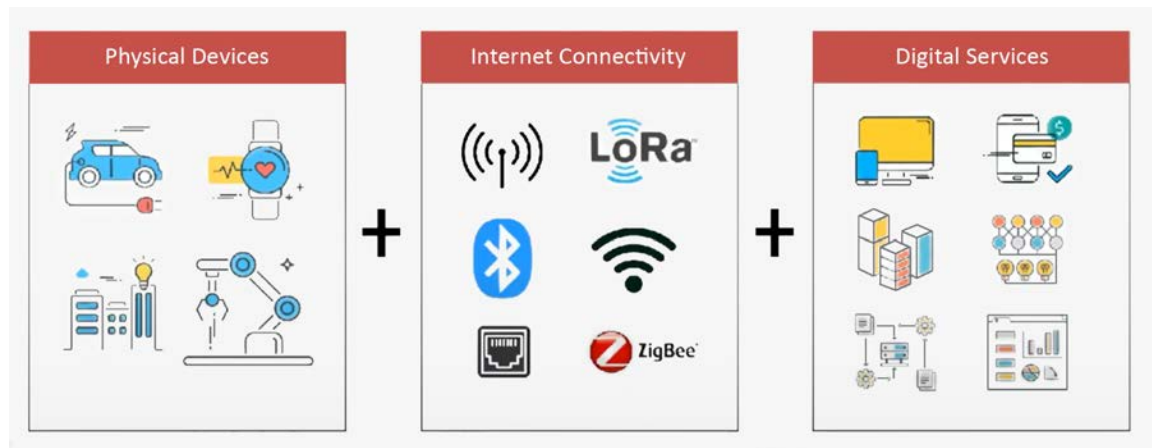

The third block is **Digital Services -** These are the things that are either on-premises or in the cloud that complete the picture. They need an interface, programs, apps, storage, and a network to collect, transfer and analyze data to facilitate machine learning, e-commerce, or advanced analytics. These need to work in tandem to be able to understand the data.

But, what can we make with those building blocks?

At SpinDance we think there are essentially 3 IoT Solution Archetypes or Models that we build: Analytics, Command & Control, Ambient Computing.

Analytics: Determines how we can improve operations, the product, and the service to our customers. This involves collecting data, then preparing, sending, processing, reporting, and notifying someone about the data.

Ambient Computing: Walt Mossberg described ambient computing in 2017 when he said, "The computers inside things will fade into the background. In some cases, they may entirely disappear, waiting to be activated by a voice command, a person entering the room, a change in blood chemistry, a shift in temperature, a motion. Maybe even just a thought. Your whole home, office, and car will be packed with these waiting computers and sensors. But they won't be in your way, or perhaps even distinguishable as tech devices. This is ambient computing, the transformation of the environment all around us with intelligence and capabilities that don't seem to be there at all."

Examples of these types of 'invisible' or ambient applications are Amazon Alexa, Soli Radar (gesture radar) by Google, HoloLens (augmented reality) by Microsoft, self-driving cars, smart factories, and machine learning applications within other industries such as agriculture and medical.

THREE LENSES OF INNOVATION

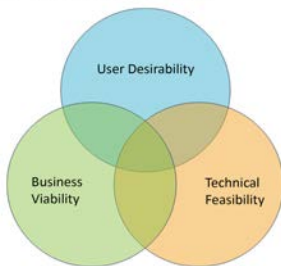*IoT is about empowering humans to make their lives better.*

How do you determine what IoT idea is the one your organization should develop?

Remember, IoT is about empowering humans. To realize success, your product or service, your 'thing', needs to be something people want, solve a real-world problem, and make their lives better.

The Three Lenses of Innovation

One of the tools we use is the 3 Lenses of Innovation which is commonly used in the Design Thinking world. At SpinDance, we regard this as one of the best navigational tools in IoT innovation. It's the north star that guides us through this journey.

The first circle is **User Desirability**: Do you have the right value proposition for a product or service that customers really want or need? If not, you won't make it in, or even *to* the marketplace.

Second is **Technical Feasibility**: How will you actually deliver the product or service? Do you have the means to not only make it but also deliver it and then support it?

Third is **Business Viability**: Do you have a business plan for this idea? Is it a plan that grows your business and generates both sustainable revenue *and* profit? In other words, does

your company have the stability needed to go the distance in bringing your idea to life within the IoT market?

The goal for your IoT innovation is to live solidly within the golden triangle where all 3 lenses overlap. This means you'll have a high degree of confidence that your idea is something customers truly want, you can deliver it, it will grow your business and be profitable.

When examining your idea through the 3 Lenses and asking viability questions, there are only 2 right answers you can have. The first is: YES WE DO/CAN. The second: NO WE DON'T/CAN'T. Both are great answers!

If you can unequivocally answer YES WE CAN, then move ahead and green light the project!

If you can't say a definitive YES to most of the areas in the lenses, then it's time to evaluate whether to refine your idea or table it. Proceeding without clear affirmative answers at this point will mean a time and money sink for your company.

But not having a clear YES or NO isn't the worst thing!

If your answer is, WE DON'T KNOW or MAYBE, it means you need to do more research or refine your idea. Trust us, it's best to spend the time now rather than have costly changes and corrections later. Just like in navigation, if your initial course is off by 1°, it can mean missing your destination completely. Do your due diligence.

Going through this process the first time can be a bumpy ride, but it gets easier each time you go through it. If you can maintain a learning mindset, you'll view issues encountered as valuable learning tools that provide organizational experience and wisdom.

A key element is *DON'T SKIP ANY OF THE STEPS*! Each one is an important exercise for you, your team, your idea, and your company. Just don't skip any… because in the end, it's worth it!

Also remember, IoT Integration is a winding, curving road; not a flat, straight, superhighway. Be prepared to be flexible and regroup if needed.

INNOVATION
SPECTRUM

The second analytical tool we rely on to determine IoT concept viability is the Innovation Spectrum by Strategyzer

There are 3 defined forms of innovation on the spectrum, Efficiency, Sustaining, and Transformative. Each one is important but for very diferent reasons.

The Innovation Spectrum

Efficiency	Sustaining	Transformative
Make operational improvements to existing products, services and business models.	Add new products, services, channels, regions to existing business models.	Explore opportunities outside of the existing business models.

Source: Strategyzer.com

Efficiency: Does your innovation/idea make improvements to existing products, services, and business models? It may not be a brand new, out-of-the-box idea but it enhances what is already in place and serves to increase your bottom line. A good example of this is when Amazon added robots to its warehouses and significantly increased eficiencies.

Sustaining: Does your innovation/idea add new products, services channels, and/or regions to existing business models? This form of innovation affects both your top and bottom line. A great example of this is the Amazon Kindle. It allowed users to read books in a new way and has continued to evolve through its software and hardware updates.

Transformative: Does your innovation/idea explore opportunities outside existing business models? This form of innovation will serve to completely reshape your business. AWS (Amazon Web Services) is a perfect example of this type of innovation. When it was implemented, it was a new brand of cloud services platform. It has greatly reduced the barrier to entry enabling many businesses to use cloud technology.

By combining these tools, we can become more specific as we examine innovation throughout an organization to determine where the greatest opportunities are.

The Innovation Spectrum

Efficiency	Sustaining	Transformative
Introduced warehouse robots to improve efficiency	Introduced Kindle to drive book sales	Launched Amazon Web Services

EFFICIENCY INNOVATIONS
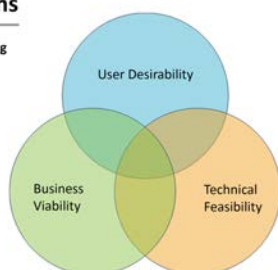
COMBINING THE INNOVATION SPECTRUM WITH THE 3 LENSES

Let's look at Efficiency through the 3 Lenses of Innovation.

When we think about **Efficiency Innovation** we are talking about Internal Users. We're looking at opportunities and initiatives within your organization that will serve to speed up Product Development, Sales, Manufacturing, Ops, Logistics, Safety, and Partners.

Next, the Technical Feasibility Lens examines and identifies methods to improve productivity, quality availability, utility costs, and safety.

Lastly, looking at Efficiency through the Business Viability Lens requires that we ask the core question: How does this improve my bottom line? Since this lens looks at improving what you are already doing, if you find that it's not saving money, improving efficiency, or making things safer, then why do it?

Efficiency Innovation is the easiest part of IoT because it is very formulaic. A lot of great work has already been done to help you understand how IoT can improve the efficiency of your organization.

A great example of some of this work is from AmazonWeb Services (AWS). They examined how IoT could help organizations and they developed these 'buckets' of efficiency improvements.

Through their extensive experience and database, Amazon determined that using IoT can significantly improve efficiencies in Productivity, Quality, Availability, Utility Costs, and Safety.

The five efficiency areas Amazon used are almost universal metrics that can be found and applied over a host of vastly different industries. Examples are Industrial IoT, Telematics Asset Tracking, Agriculture IoT, Medical IoT, Retail IoT, and Energy IoT.

If the diagram above looks somewhat familiar, it's because the first three 'buckets', Productivity, Quality, and Availability, are fundamental components of the Overall Equipment Effectiveness Metric. The equation: OEE = A x P x Q is the gold standard for measuring manufacturing productivity

If any business is struggling to understand how IoT can help their organization or customers, this is a great place to start. Every business wants to increase and improve in these areas!

At SpinDance, we've experienced firsthand how IoT can reduce Utility Costs in lighting, heating, and energy consumption. We found with one of our lighting projects using smart sensors, our customers can easily save anywhere from 5% to 15% in their utility cost. These are real-world, efficiencies that impact the financial health of companies.

SUSTAINING &
TRANSFORMATIVE
INNOVATIONS

COMBINING THE INNOVATION SPECTRUM WITH THE 3 LENSES

Through the **Sustaining Innovation** blended lens, the Users are defined as existing customers (more or less). This changes your audience somewhat and begins to transform it.

You are still looking for ways to improve existing products and services or finding innovations to sell to your market.

Sustaining Innovations
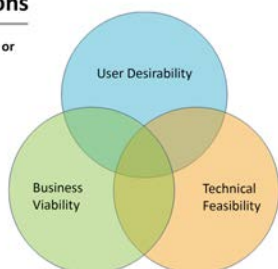
In this instance, the core question becomes: How does it improve the TOP line? How does this increase revenue, margins, and create barriers to entry for my competition?

A real-world example of this is with Flow-Rite's product, the Battery Steward. For Flow-Rite, the Technical Feasibility aspect of this innovation created the User Desire and the Business Viability was slower to manifest. However, it drove the top-line revenue and allowed them to differentiate in the market which meant their competitors were running to catch up.
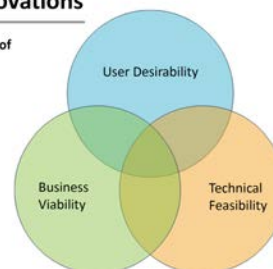
Users, under the **Transformative Innovation** blended lens, tend to be brand new categories with new sets of problems to solve. You are looking outside of the core market and customer segments into new areas.

The Technical Feasibility is related to brand new products and services that no one has seen before.

Transformative Innovations

Under the Business Viability lens, the core question becomes: How does this transform the business? It isn't about how it improves the business, but how do you enter a brand-new part of the market?

Examples of this are Amazon and Apple. Both organizations transformed themselves over the past couple of decades.

For Amazon, they didn't actually start over. Instead, they took their existing knowledge and skill in managing the world's largest website and created new products and services. They packaged AWS in a new way, and it has become their largest source of revenue and profit.

In a similar way, Apple took their skill in creating computers and developed the iPad internally. The lessons learned through that process directly translated into the development of the iPhone. This transformed Apple from just a computer manufacturer into a well-rounded consumer electronics group with a host of highly branded products.

These are both examples of how to take what you already know, seize the moment, and move forward by scaling your knowledge and skills successfully

Our customer Flow-Rite also did this when took their knowledge of fluid flow and plastics manufacturing in the marine industry and applied them to move into the hydroponics aspect of the agriculture industry. It was transformative as far as a market perspective but wasn't that different for them as a manufacturer. They were able to develop a completely new category of Users for products that were highly adaptable to a new application.
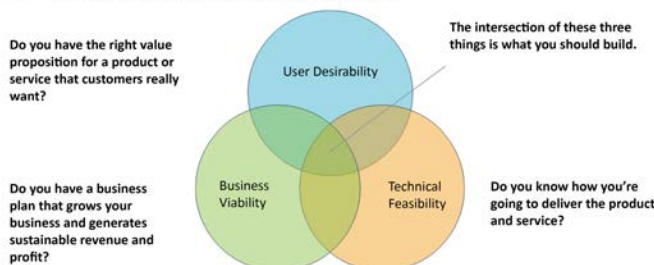
THIS IS YOUR
SECRET SAUCE!

Your Secret Sauce is the competitive differentiation found within the intersection of the 3 Lenses of Innovation.

When you have something - an IoT product or service - that people want, that you can do, and it grows your business – *that's your **Secret Sauce, your competitive differentiation and advantage**!*

The Three Lenses of Innovation

Do you have the right value proposition for a product or service that customers really want?

The intersection of these three things is what you should build.

User Desirability

Business Viability

Technical Feasibility

Do you have a business plan that grows your business and generates sustainable revenue and profit?

Do you know how you're going to deliver the product and service?

But, it isn't going to be just one thing – it needs to be a variety of 'flavors' and it depends on which part of the business you're talking about. It can be multiple projects in different aspects of your organization. But, it needs to be a portfolio of innovation that carries your organization forward.

Our advice to you is to narrow your scope within the portfolio and focus on 1 or 2 priorities rather than diffusing resources over multiple projects at one time. Make sure you have allocated resources properly so when the market tells you it's time to move, your organization is agile and ready to push the projects across the finish line successfully

In all of this, remember that people, culture, and capabilities are the core of your organization. Developing relationships internally and externally through channels and supply chains will carry your company for the long term.
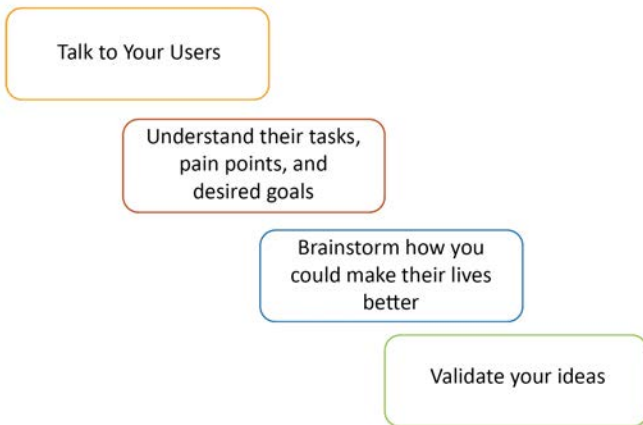
COMPETITIVE
DIFFERENTIATION
— *User Desirability*

It goes back to the 3 Lenses of IoT Innovation!

If we start with the **User Desirability** lens, it's about finding the desirable features.

Finding Desirable Features

One of the most important things to do is talk to your Users. Bring your experts to the table and have conversations with them to understand how they will use your product.

As defined, Users aren't limited to External End-Users of your innovation. This may include people from within your organization, especially if you're looking at Efficiency Innovations.

Really get to understand how the Users work, their pain points, and their desired goals or outcomes. Once you understand these three things, brainstorm on how to make their lives better. Then, go back to them to receive input and validate your ideas.

It's important to note here that you can't change what you don't measure.

The 4-step pattern used in finding the Desirable Features is the more challenging aspect of IoT Innovation but, it's crucial to keep your idea path on target.

First, collect information from what you see or what people are telling you with regard to their pain points and usage. Compile the data impartially so you have pure information on which to base the next steps.

Second, analyze the data to help decide what actions are needed to hit the required goals.

Third, determine what meaningful action needs to be taken. Does an alert need to happen? Focus on what you want to happen.

Fourth, determine the desired outcome. Is it reduced downtime? Is it improved asset optimization?

We've found that most IoT use cases can be put into a matrix, like an example below, which we used for Flow-Rite's Battery Steward.

The IoT Value Pattern: Before Battery Steward

	Not Possible Today	Manual	Assisted	Automated
Collect Data		Measure Battery Health		
Analysis & Decision		Decide if we need service or replacement		
Take Action		Order service or replacement		

In this example, we took the three activities of Collect, Analyze, Take Action and put them into the grid so we could deconstruct the issue and dream about how to make this a better outcome for the User. We wanted to move the actions from Manual to more Assisted and Automated processes to increase efficiency and reduce machine downtime.

After we analyzed the data, we determined which actions the IoT product could help with and began to develop based on that determination.

The IoT Value Pattern: After Battery Steward

	Not Possible Today	Manual	Assisted	Automated
Collect Data				Measure Battery Health
Analysis & Decision			Decide if we need service or replacement	
Take Action		Order service or replacement		

COMPETITIVE
DIFFERENTIATION

Technical Feasibility

To really understand the **Technical Feasibility** of your IoT Product, you need to look at its overall lifecycle.

In this step, there are 3 main areas to consider: Development, Installation, and Usage.

The Big Picture: Total Cost of Program

Development Costs consist of research, scoping, and discovery to determine the viability of your product. Then your product goes into the design, prototype, and testing stage before it goes to manufacturing. You may even need to get it certified by outside agencies. The product then needs to be manufactured, distributed, sold, and marketed. You'll also need to train your internal team on it.

Installation Costs may or may not be a large portion of total costs. But, if it's a major piece of equipment, you might be involved in the installation. Again, depending on the complexity of your product, you may incur costs in training your customers on how to use your product.

After your product reaches the market, you incur Usage Costs such as the operation of cloud storage, maintenance costs for parts that need to be fixed, support, and servicing to fix them. One of the aspects often overlooked is End-of-Life support which also has a cost.

Have a plan and execute the plan.
-Brian Tol

Your big technical picture is the End-to-End lifecycle of the product and the ongoing maintenance to keep your product working well and connected for use by happy customers. You will need to know how long you want your product to be in service and how long you will support it to factor those costs into your initial budget.

Also, within the technical considerations, you need to account for lifecycle changes outside of your control. The IoT world is constantly changing in connectivity, mobile phone technology, software, cloud platforms, and changes in programming languages. You'll need to make provisions for how you react to these changes and update your product or device to stay connected.

There will always be 'bad things' that happen such as security issues, software or hardware malfunctions, or other changes that can happen without notice. Consider having a plan in place to have a quick reaction time and keep your device functioning with as little downtime as possible.

This is an ever-changing area but don't be afraid to dive in. It's becoming easier and less expensive all the time. Things and processes that used to cost hundreds of thousands of dollars are now just simple plug-ins from providers like AWS. Rather than trying to re-invent the wheel, develop expert partners that can provide the skills and experience you need on demand.

COMPETITIVE
DIFFERENTIATION
Business Viability

Channels & Customer Relationships

Determining **Business Viability** with IoT is the most invoved part of this process. This is about applying the technology to improve both the user experience and outcomes, then creating a business model around those.

A great tool we use at SpinDance is the Business Canvas Tool, also from Strategyzer
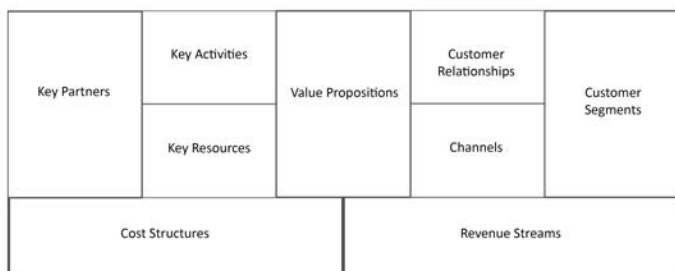

Essentially this is a single-page business plan. There are a lot of ways to do this but we've found this is a simple and effective tool to give you a balanced business approach that is technically successful and a winner for your organization.

Value Propositions & Customer Segments

The first 2 parts to look at are Value Propositions and Customer Segments – this is the User Desirability of your product. You must make something that people care about and want. Your product or service solves real-world problems for them, and they want to give you money for it!
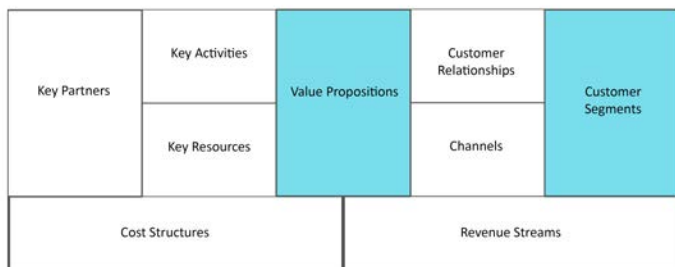

IoT unlocks new value propositions by shifting values. It also creates additional customer segments which you may not have anticipated. Some customers will struggle with IoT, others will embrace it and excel.

An example of unanticipated customer segments is from Flow-Rite. When they launched their Battery Steward, they intended the product for smaller companies that didn't have staffing and resources to manage their battery rooms. However, after launch, it became apparent that customers most interested in the application were the larger corporations where Battery Steward increased efficiencies, reduced waste, and downtime, which drove their productivity to a higher level.

Channels & Customer Relationships

The next areas to look at are Channels and Customer Relationships – how you will distribute the product to your customers. Relationships are the touchpoints your organization has with your customers. Channels are part of that but with IoT, you will have a more direct relationship with your customer.
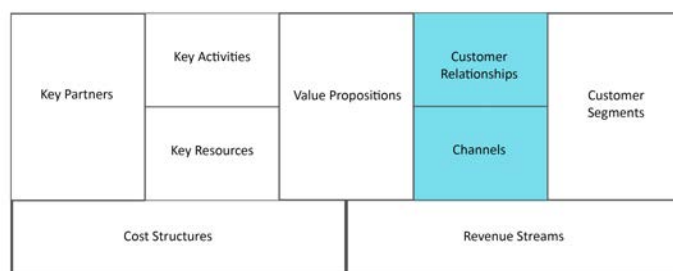

The change in relationship with your customers has the potential to disrupt your traditional channel relationships. Think about this early and address the change upfront with your channel partners to avoid issues and minimize the impact it may have on these relationships.

### Key Partners, Activities, Resources

The Key Partners, Activities, and Resources are the 3 things that make up the Technical Feasibility of your product.

Source: strategyzer.com
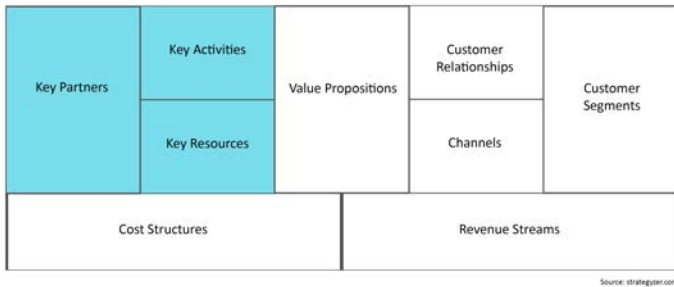
You may need to bring on new suppliers with new skill sets. Processes within your organization will need to evolve across all departments to make them more agile. You'll need to improve or build new internal resources to support your IoT products.

By having the right people, partners, and processes in place, you will deliver something great to your customers!

Cost Structures and Revenue Streams

Source: strategyzer.com
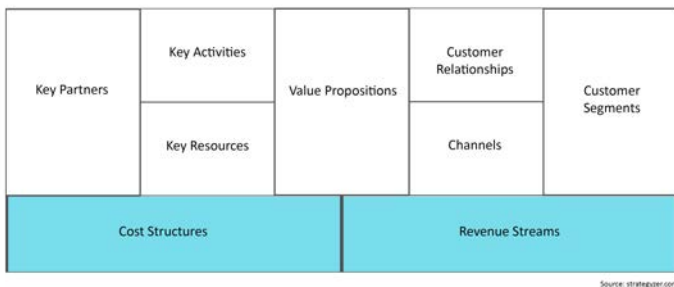
Last are Cost Structures and Revenue Streams – this includes everything it takes to build and maintain a holistic system and all the ways you'll make money on the product. You will have new upfront and ongoing costs that weren't there before, but you also have new forms of revenue being generated.

Your IoT Platform requires an initial capital investment with a multi-year ROI. You won't be able to magically build a new IoT product and get an immediate return. Real items like new equipment, machinery, training, staffing, and possibly a new building are things you may need to invest in. The pay-back period will come later so your organization needs to be able to weather those costs prior to the revenue stream coming in.

You will have ongoing costs such as software maintenance, cloud computing, storage, and bandwidth costs. Make sure to factor those into the cost of doing business. Our recommendation is to include these costs into the BOM and set the price accordingly.

Because the IoT connection gives you a 24/7 connection to your customer, it creates a new revenue stream opportunity for you to monetize.

There are 3 types of Revenue Opportunities in IoT.
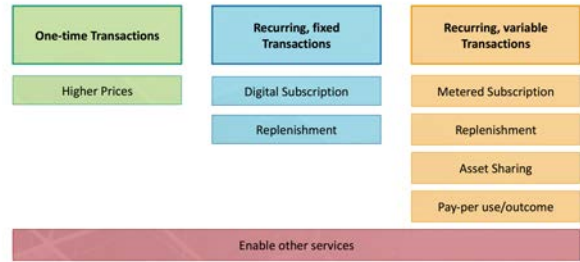
The first is a **One-Time Transaction** – a single moment in time – one and done. An example would be you purchase an IoT integrated appliance (such as an oven) – the IoT features are available to the user but require no further action or connection to the manufacturer.

Second is a **Recurring, Fixed Transaction** – this is based on a time period, not usage. A great example of this would be a monthly movie streaming subscription. Whether you watch 0 hours or 1,000 hours of movies in a month, you are charged the same amount.

The third is a **Recurring, Variable Transaction** – this is based on both a time period and usage. A prime example of this is your utilities. You are charged for your consumption. Use more, it costs more - use less, it costs less.

Because IoT devices are connected, you can blend or mix and match different models!

For instance, in the One-Time Transaction, you would sell the product alone, but with higher pricing.

With the Recurring, Fixed Transaction, you can sell the product with a subscription giving you a one-time sale plus a monthly revenue stream.

And for the Recurring, Variable Transaction, you could offer metered subscriptions which allows you to not only sell the product but also share the monthly costs with the customer.

Replenishment subscriptions for both Recurring Transaction models are also popular ways to generate revenue from your IoT product.

Other forms of income can include, Asset Sharing: you split income generated from your product with your customer. Examples of this would be wind farms or solar panels which generate energy that you can share.

Pay-Per-Use or an Outcome Model: the customer only pays when they use the item. A great example of this is an urban scooter or bike rental.

Enable other services: space planning or anything else customers need that you can provide.

IOT CHANGES
YOUR COMPANY

When you begin your IoT Journey, you will quickly discover that IoT transforms your products and tools into a combination of physical devices and digital services. This fundamentally changes the relationship between you and your customers. It also enables new business models requiring new skills, new perspectives, and new partners that lead to changes in corporate culture.

You have a choice to make. You can either let the transformation happen to you organically - which can cause internal chaos or disruption. Or, you can proactively manage the changes to keep all departments on relatively the same page for smoother interaction. The better choice is to have a systematic plan and approach to move all the areas of your organization through the IoT Journey stages at approximately the same time.

CONCLUSION
This was a quick overview of all the different parts of a business you should be thinking about when going into IoT. As you can see, ALL the aspects of your business and organization will be impacted by IoT

IoT will holistically transform what you do and how your business functions.

It's important to have a balance within the 3 Lenses of Innovation between the Desirable Features that people want, the Technical Ability to produce and deliver your product, and the Business Model that will sustain the organization and generate revenue.

The Spectrum of Innovation shows you how to use IoT to improve the efficiency of your organization, extend and sustain what you are currently doing, and create transformational efficiencies.

We examined the different ways IoT can impact and revolutionize your business and that it's important to not only brainstorm but jump in because technology changes rapidly. The military adage that "if you wait for 100% of the information, the information will have changed" also applies to the IoT environment. If you wait for everything to be 100% you will have missed the window of opportunity

IoT changes you, your organization, internal and external relationships, and, ultimately how you do business. Because of this, it's important to have experienced and trustworthy partners to walk alongside you in the IoT Journey and help you navigate through rough waters.

Getting started isn't easy but, as experts in IoT Integration, and with a tried-and-true approach, **SpinDance** partners with you, guiding your team and your product to a smooth and successful launch.
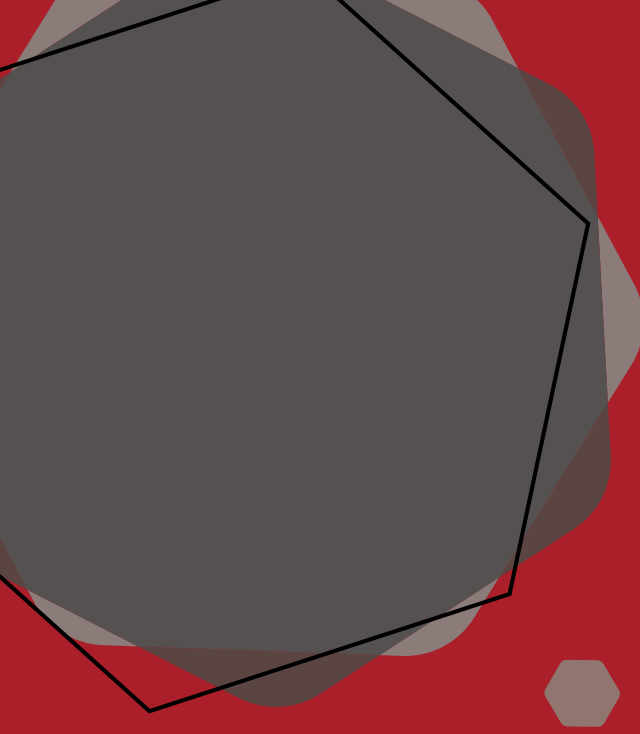
Contact us to schedule a customized Business Value Proposition Workshop for your company.

As IoT changes your product, it changes your organization.

SPINDANCE.COM | *WHAT'S YOUR SECRET SAUCE?*

SpinDance architects, builds, and manages the software that powers today's connected smart products.