UTAH TECH LABS

Today's Challenges and Tomorrow's Solutions: Uncovering Enterprise Needs for IoT Adoption

Contents

![Utah Tech Labs - Your Business Automation Engine]

Utah Tech Labs Foreword

LoRaWAN® hits maturation point as enterprise adoption is expected to double by 2024.

The constantly increasing deployments show that enterprise adoption of the Internet of Things (IoT) is on the verge of becoming mainstream. The need for specialized solutions like asset tracking, increased demand for affordable networks, greater adoption among key verticals are all elements driving this expansion. Furthermore, there are no signs of slowing down: by 2025, the worldwide IoT industry is expected to reach $875 billion.

It will be crucial for decision-makers to thoroughly evaluate the alternatives available to them across the whole IoT stack as more IoT deployments become a part of organizational plans and timelines. At Utah Tech Labs, we believe that each enterprise deployment is unique and not a one-size-fits-all approach will work. There are a variety of IoT connectivity choices available on the market. Ranging from the well-known protocols (LTE and Wi-Fi) to the emerging ones (5G) and those gaining traction (LoRaWAN®), which adds to the complexity. Even though it is clear that businesses will need to combine a number of different technologies to support their IoT solutions, the LoRaWAN protocol, widely used for low-power wide-area network (LPWAN), is the key component of numerous enterprise-wide deployments nowadays.

Additionally, numerous IoT complexities are pushing businesses to prioritize simplicity, scalability, and serviceability. With this in mind, Utah Tech Labs assists customers from a variety of dynamic industries and helps them to create, connect, and deploy their modern IoT solutions at scale in a secure manner. Here is how.

- A well-known biopharmaceutical company wanted to improve their daily processes: from employee collaboration and equipment utilization to real-time tracking of its 12,800 moveable assets around a 725,000 square feet campus. The organization has reduced the inherent complexity often associated with IoT by installing Utah Tech Labs' end-to-end asset tracking solution which includes hardware leveraging BLE, a network connectivity foundation built on LoRaWAN, and in-house deployment services. There is only one supplier for the entire IoT stack. Additionally, the solution offers enhanced security and a simpler, quicker-to-market installation because it avoids using the company's Wi-Fi network. With the solution in place, the business is free to concentrate only on its primary goals.

- A nationwide food service retailer was looking for a tech provider with the same values (such as excellent customer service) when it came to automating temperature monitoring processes in freezers and refrigerators across its stores. The nationwide deployment services and ongoing support provided by Utah Tech Labs were vital to the organization. With the solution designed and integrated, the company can now streamline food safety and compliance reporting, enabling personnel to have more time to dedicate to their customers. The company is now planning to further invest and grow the LoRaWAN infrastructure that the current temperature monitoring solution is developed upon.

- It's a battle against time in the global auto auction market. Whether it's reducing cycle times to get vehicles quickly on and off lots or striving to outstand competitors with the most modern vehicle inventory management solution, scalability is core to enterprises' business strategy. A multinational auto auction company was looking for a technology solution that would increase their technical capability (i.e., data transfers over long distances) as well as cost-effectiveness (i.e., lower per-device cellular connectivity fees and device battery replacement costs) that they weren't getting from their previous inventory management solution. By utilizing Utah Tech Labs' LoRaWAN platform, deployment know-how, installation services and support, the company quickly transitioned from tracking a small portion of vehicles on a few lots to full-scale deployment. The company expanded to 333,000 automobiles across over 85 lots in North America, becoming the first in their industry to do so. Among other achievements, the company mentions increases operational efficiency, enhanced employee productivity, and raised customer happiness.

Summary

Digital transformation was a top priority for businesses looking to modernize operations and maintain competitiveness long before the pandemic. This priority has now turned into a necessity due to persistent labor shortages and supply chain problems. Current economic conditions are requiring companies have a sharp focus on productivity improvements — which is an area where Internet of Things can help. Furthermore, enterprises are seeking benefits like productivity gains, safety improvements, energy efficiencies, cost savings, and even opportunities for new revenue streams.

As such, one big driver of the demand for IoT has been the need for better integration in sectors that depend on sensor-based measurements and monitoring systems. These industries are expected to drive the expansion of IoT well into the future.

With the aim to better understand the industry, Utah Tech Labs has conducted a study of more than 200 North American businesses planning or deploying IoT solutions. The study investigates their technological preferences, needs, and challenges associated with IoT deployments. This paper will also provide a general review of LoRaWAN technology and its main applications.
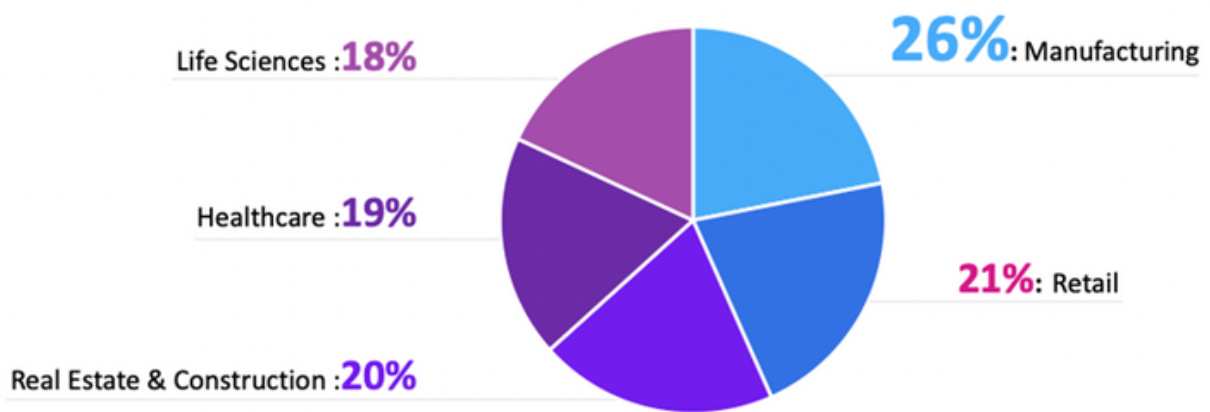
Overall, study findings identified three key business needs and requirements for IoT solution providers, highlighting LoRaWAN as the most suitable technology to satisfy the following goals:
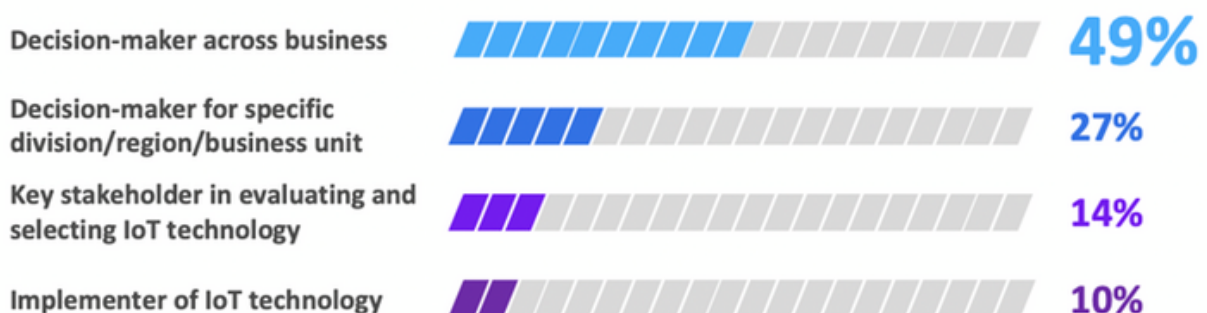
- Scalability: Support the rapid deployment of IoT solutions across several campuses or geographical areas, transitioning from the pilot to enterprise deployment, and building an infrastructure that supports an increasing number of connected devices and IoT use cases.

- Serviceability: Offer technical and strategic support for the solution's lifetime, both before and after the deployment of IoT infrastructure, devices, and solutions.

- Simplicity: The capacity to reduce the complexity of creating, deploying, and maintaining IoT systems, regardless of industry or size.

Survey framework

While surveying 200+ enterprises across healthcare, manufacturing, real estate, construction, and retail sectors, Utah Tech Labs spoke to critical decision-makers, including implementors of IoT technology, key stakeholders, representatives of specific regions and business units (See Figure 1). The survey did not include the answers of those respondents who were either uncommitted or not planning IoT projects or who were not in a position to influence IoT decisions.

Q: Which of the following describes your role in the organization?

Role	%
Decision-maker across business	49%
Decision-maker for specific division/region/business unit	27%
Key stakeholder in evaluating and selecting IoT technology	14%
Implementer of IoT technology	10%

Utah Tech Labs surveyed key decision-makers about their IoT deployments—both current and future ones—strategies, technological preferences and solution providers.

Key findings

The poll reveals three essential enterprise requirements: scalability, serviceability, and simplicity. The requirements are supported by self-reported deployment plans/schedules, financial targets, and barriers impeding timely, continuous project delivery.
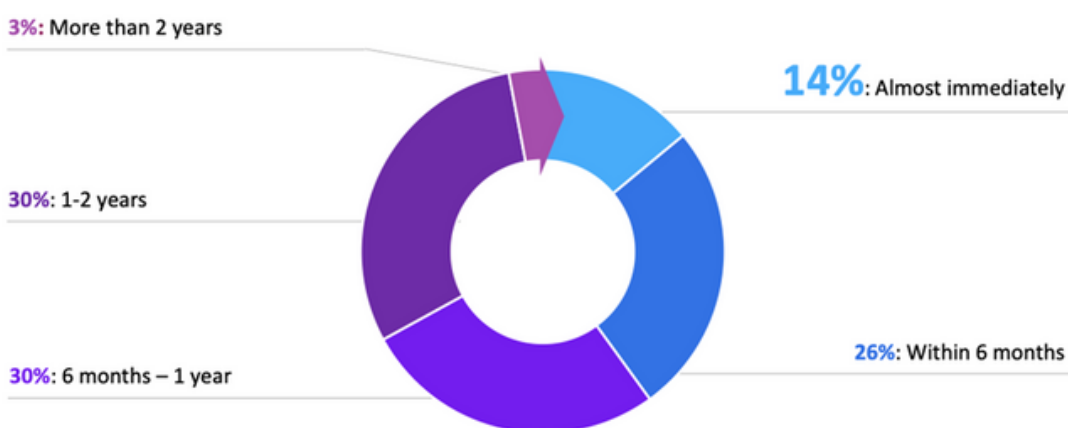
What do enterprises look for?

Quick ROI

With more than two-thirds (67%) of survey participants expecting a ROI within a year and only 3% expecting it to take longer than two years (see Figure 2), businesses are experiencing significant pressure to see a speedy return on investment (ROI) from their IoT projects. This assumption contradicts the myth that most Internet of Things initiatives are "white elephants" or "money pits."

IoT implementation relies on crafting a plan that leaves room for unforeseen challenges and the support of solution partners in changing direction if needed.
While the pursuit of rapid ROI is important for achieving short-term goals, it is not necessary for IoT implementation.

Figure 2. ROI expectations

Q: How soon after deployment must your IoT solution(s) show a return on investment?

3%: More than 2 years
14%: Almost immediately
30%: 1-2 years
30%: 6 months – 1 year
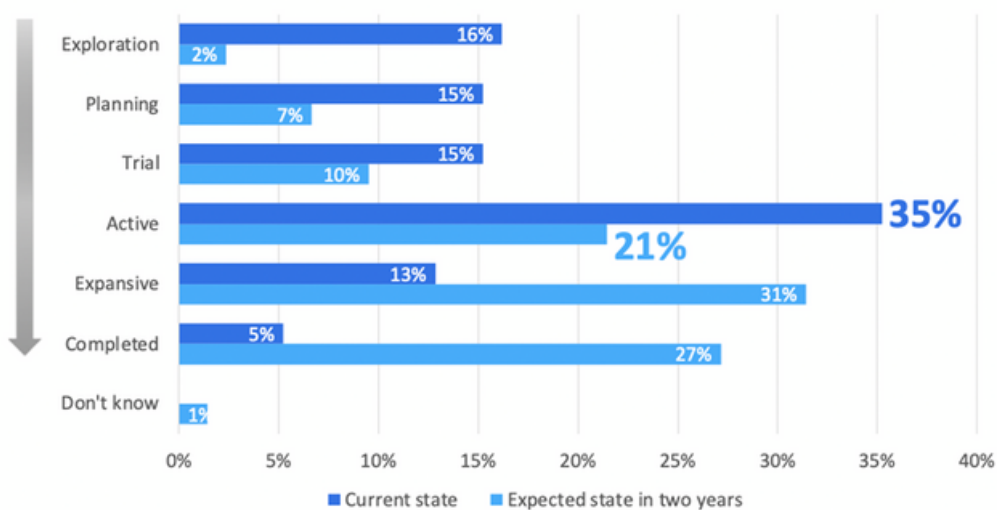26%: Within 6 months

Source: Omdia

Speed to market

Enterprises also have high expectations in terms of speed at which their IoT initiatives should be developed from pilots or proof-of-concepts (POCs) to scaled deployments. According to the poll, 46% of businesses are now in the early stages of exploring, planning, or testing their IoT implementations. Nearly 80% anticipate being in an active or expanded phase or having finished their IoT initiatives during the next two years, which presents a significant shift (See Figure 3).

While growth is highly important for business, scaling IoT initiatives can introduce unexpected difficulties that slow down time-to-market. Trials, for example, are typically conducted in controlled environments, while transitioning to real-world deployments can be tricky. Furthermore, a trial network is significantly simpler than the large array of servers, gateways, and routers required to operate a live, real-world implementation. As a result, many businesses will need assistance from a partner with the network backbone, experience, and deployment services that are necessary to quickly scale and go to market.

Figure 3. IoT deployment status

Q: At what stage is your company in its IoT deployment?
Current state; expected state in two years

Stage	Current state	Expected state in two years
Exploration	16%	2%
Planning	15%	7%
Trial	15%	10%
Active	35%	21%
Expansive	13%	31%
Completed	5%	27%
Don't know	1%	

■ Current state   ■ Expected state in two years

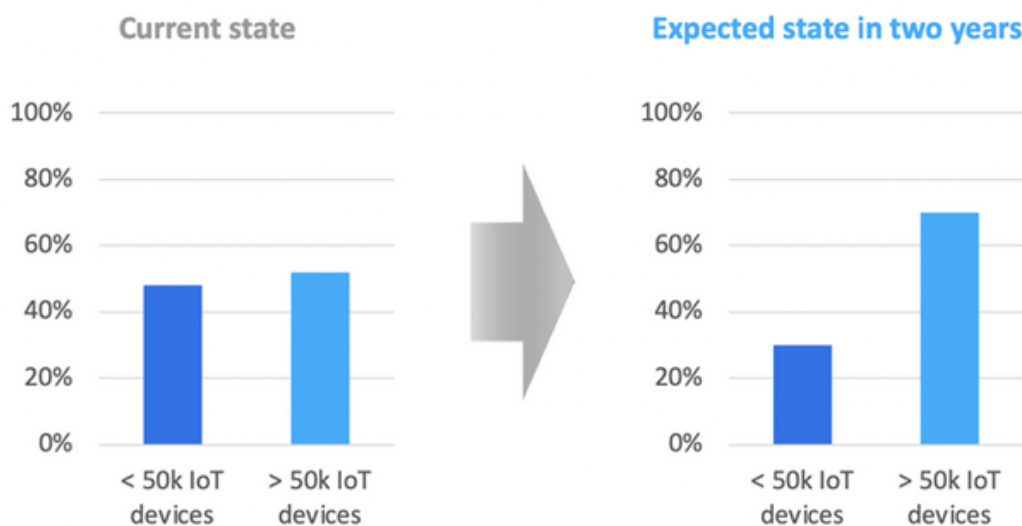Source: Omdia

Increased number of connected devices

Skeptics might have been cynical about the aggressive growth curves forecasted for IoT connections; however, survey results evident the contrary. Over the next two years, enterprises are planning to mature their IoT solutions and significantly expand network infrastructures, along with end-point devices deployed.

As for the numbers, 52% currently have fewer than 50,000 IoT devices deployed - yet in two years, 70% of them plan to reach this number (with 5% expecting to expand to 1 million) (See Figure 4). In order to achieve such goals, enterprises should prioritize technologies that enable easy scalability as well as vendors that can support them along the way.

Figure 4. LoRaWAN® impact on IoT deployment status

Q: At what stage is your company in its IoT deployment?
Current state; expected state in two years. Showing 'later stages' as active/expansive/completed combined

Current state

Expected state in two years

Source: Omdia

What's preventing enterprises from getting there?
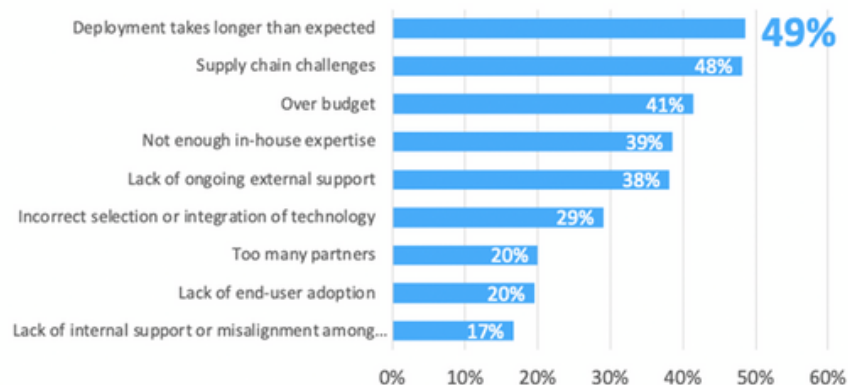
Priorities & expectations misalignment

The capacity to quickly connect and deploy a big number of devices, which results in a rapid return on investment (ROI), is the ability to connect and deploy a large number of devices that may be summed up as what survey respondents want from their IoT solutions. The discrepancy between these expectations and the actual planning and implementation of IoT initiatives, however, poses a substantial difficulty.

The goal for "speed to market" while simultaneously recognizing the drawn-out deployment procedure as the main barrier to attaining ROI is an exemplary example of this misalignment (see Figure 5).

Figure 5. IoT adoption roadblocks

Q: What are the biggest roadblocks to achieving ROI?
Select top three

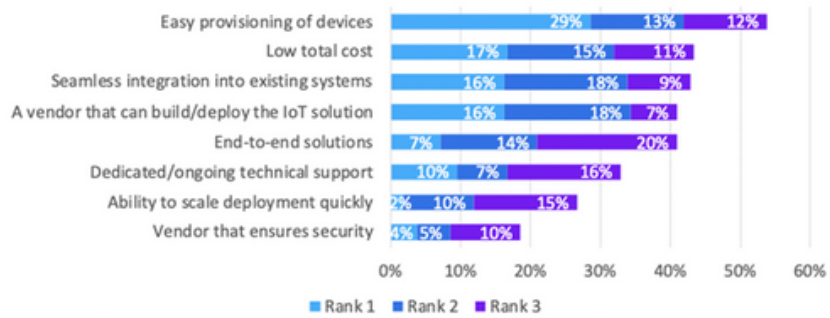| Roadblock	Percentage
Deployment takes longer than expected	49%
Supply chain challenges	48%
Over budget	41%
Not enough in-house expertise	39%
Lack of ongoing external support	38%
Incorrect selection or integration of technology	29%
Too many partners	20%
Lack of end-user adoption	20%
Lack of internal support or misalignment among...	17%

Source: Omdia

There is another interesting finding to draw attention to. Only 27% of respondents gave "the ability to rapidly scale deployments" as one of their top three priorities when asked to name the most important aspect to consider when evaluating an IoT solution, specifically regarding the quickest way to validate the efficacy of the technology (see Figure 6).

Figure 6. IoT evaluation requirements

Q: What are your most important requirements when evaluating an IoT solution?

Select top three

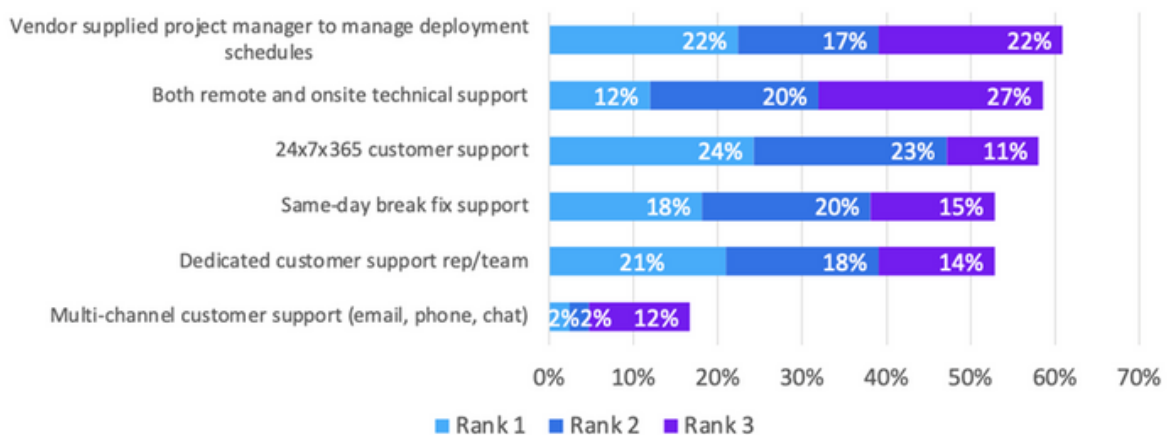| Requirement	Rank 1	Rank 2	Rank 3
Easy provisioning of devices	29%	13%	12%
Low total cost	17%	15%	11%
Seamless integration into existing systems	16%	18%	9%
A vendor that can build/deploy the IoT solution	16%	18%	7%
End-to-end solutions	7%	14%	20%
Dedicated/ongoing technical support	10%	7%	16%
Ability to scale deployment quickly	2%	10%	15%
Vendor that ensures security	4%	5%	10%

Source: Omdia

Challenges during deployment

All organizations express the desire for the quickest time to market. Many people agree that this goal is still elusive, however, because of the difficulties posed by rapid and wide deployments as well as other deployment-related problems. It is clear from the survey results (see Figure 7) that companies give priority to vendors who can provide the required support and services. The need for project managers provided by a vendor combines the three requirements discussed above: controlling scalability, lowering complexity, and providing great service. In addition, "remote and onsite technical support," "24/7 availability," and "same-day resolution" are in high demand. This information emphasizes how important it is to work with reputable vendors who have the resources and capability to offer on-site and rapid technical support and services. These suppliers are often big businesses with a solid reputation and a track record of success. Smaller businesses frequently lack the capacity, expertise, or finances necessary to achieve the support standards demanded by larger businesses.

Figure 7. IoT support factors

Q: What support factors do you most prioritize when making IoT purchasing decisions?

Select top thre

Support factor	Rank 1	Rank 2	Rank 3
Vendor supplied project manager to manage deployment schedules	22%	17%	22%
Both remote and onsite technical support	12%	20%	27%
24x7x365 customer support	24%	23%	11%
Same-day break fix support	18%	20%	15%
Dedicated customer support rep/team	21%	18%	14%
Multi-channel customer support (email, phone, chat)	2%	2%	12%

Source: Omdia

Earlier planning of ROI in the IoT journey

Given the lofty ROI goals established by enterprises, it becomes essential to give the attainment of these goals top priority from the beginning and throughout the whole IoT journey. Figure 8 shows that only 6% of respondents rated ROI as the least significant financial factor during the investigation, planning, and trial phases of the IoT journey. In the later stages of the IoT journey, which includes the active, expanded, and completed phases, this figure more than doubles to 12%. Additionally, compared to only 38% in the early phases, more than half of respondents (55%) listed ROI as one of their top three goals during these later stages.

Being provided the high ROI targets established by businesses, it is essential to put more of an emphasis on reaching them from the very start of the IoT journey. The poll results unmistakably show that in order to optimize their chances of realizing the desired financial benefits, IoT decision-makers must change their attitude and consider ROI as a crucial financial factor.
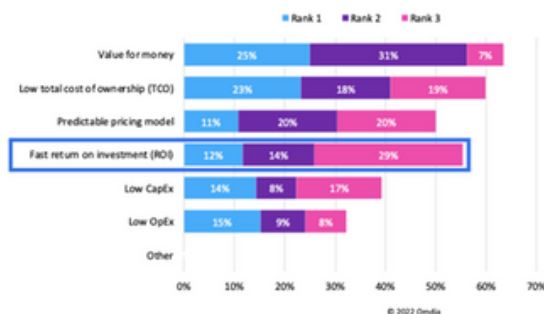

Figure 8. IoT financial factors

Q: What financial factors do you most prioritize when making IoT purchasing decisions?
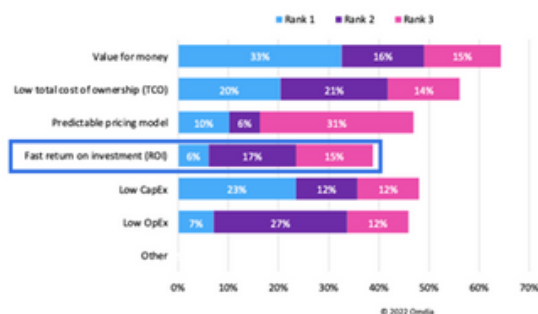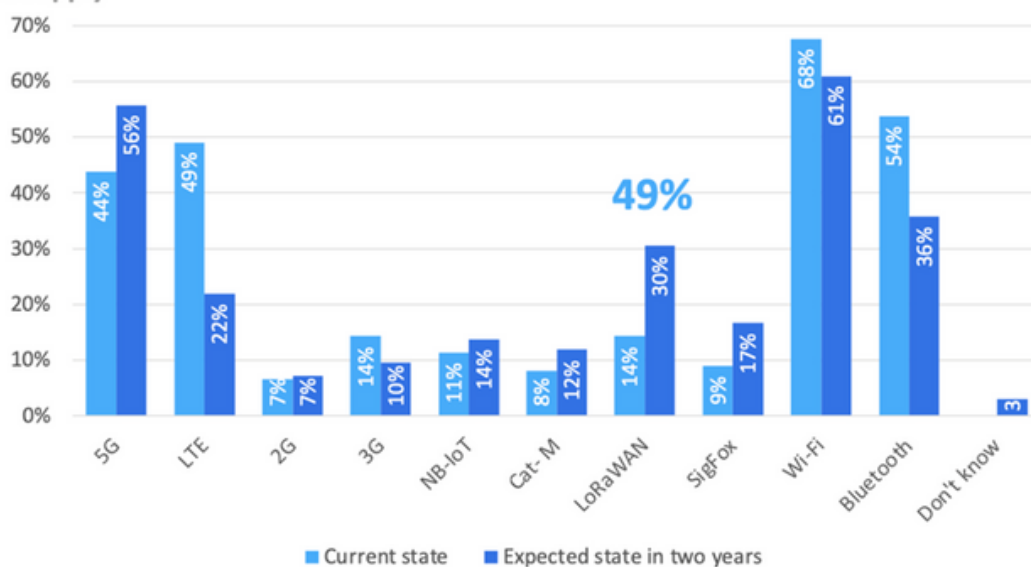
Source: Omdia

Various connectivity options add to the complexity of IoT

Rarely would a business rely only on one solution to meet all of its IoT needs. Organizations instead use a multi-protocol strategy to simultaneously meet a variety of IoT use cases. In fact, 68% of respondents state that choosing the exact use case comes first in their decision-making process before choosing the best technology to deploy.

Figure 10. IoT network choices (detail)

Q: Which network technologies are used for your IoT solution(s)?
Select all that apply

Source: Omdia

The Three S's for Success: Scalability, Simplicity, and Serviceability

The results of the survey confirm that businesses want to build and implement IoT solutions more quickly. To succeed in the long run, they want to act rapidly while also doing it properly. The three crucial enterprise requirements—scalability, serviceability, and simplicity—are therefore given a lot of attention.

Scalability

Enterprises must carefully choose technologies and vendors that offer scalability and user-friendly solutions, while also emphasizing great service, including post-deployment support, in order to meet their growth objectives. These technologies enable smooth network extension, extensive device availability, rapid scaling, and compatibility.

Serviceability

For all Internet of Things projects, complexity reduction is of utmost importance. While some firms desire a comprehensive solution that includes hardware, software, and connection, others choose a dependable partner that can ease problems in the connectivity's middle layer.

Businesses prioritize reducing complexity and related expenses in their IoT solutions in the current business environment. In order to ensure sustainable long-term project success, it is crucial to choose a vendor who can work with you to build unique solutions within predetermined timescales, offer continuing support, and streamline the process for the customer.

Simplicity

Numerous difficulties arise when moving an IoT solution from the testing stage to the final deployment, and continuing maintenance of an IoT system might be even more difficult. Therefore, during the "day two" period, strong support is very important. Many organizations struggle to put together thorough internal support teams due to a lack of qualified personnel, free time, or adequate funding. The labor shortage is blamed for these restrictions by half of these enterprises, while HR issues and crucial skill gaps are also mentioned. Organizations can eliminate the need for large internal support staff and all but eliminate support-related worries by depending on vendors to provide consistent, dependable, and outstanding service.

Case study: TECKRONE

Customer's need

Introducing the Smart Track and Notify system, a revolutionary approach to the industry-wide problem of lost and stolen packages. With millions of packages disappearing everyday costing businesses billions of dollars, it's time for a creative approach. Our ground-breaking solution provides real-time tracking and prompt notifications by seamlessly integrating with smart doorbells, delivery personnel, and merchant data systems. The Smart Track and Notify system is where the delivery of the future begins.

Background

With the escalating volume of deliveries and the increasing prevalence of online shopping, customers are expecting a solution that guarantees safe and timely arrival of their packages. Millions of parcels are transported and delivered every single day in the quick-paced world of today's international delivery networks. A 2019 survey found that big firms handle startling amounts of deliveries, with UPS managing 22 million, FedEx managing 17 million, and Amazon handling 1.5 million every day.

However, amidst this massive delivery operation, there is an alarming statistic that cannot be ignored. Approximately 15% of online deliveries, accounting for around 1.5 million packages, are lost or stolen each day in the United States alone. In fact, in the bustling city of New York, an astonishing one million packages, valued at around $25 million, are lost every single day, as reported by Business Insider.

Smart Doorbells revolutionize delivery by effectively addressing the $7 billion lost revenue problem faced by merchants and supply chain giants like UPS and FedEx. With real-time tracking and instant notifications, customers gain peace of mind while remotely monitoring their packages, merchants are powered with valuable insights, and financial losses caused by missing deliveries are reduced.

Case study: TECKRONE

Customers as part of our team

To ensure a successful product development process, we adopted a collaborative approach, engaging with our customers as one team. We recognized the importance of gathering valuable insights and understanding the market dynamics to shape our product effectively.

This collaborative approach allowed us to gather valuable data and insights, enabling us to identify the gaps in the market, such as lost packages, and tailor our product to meet the specific requirements of our target audience. By actively involving our customers in the Smart Doorbell development process, we fostered a sense of ownership and co-creation. This collaborative approach ensured that our customers felt heard and empowered, knowing that their voices were being valued and incorporated into the final product. We were able to create a comprehensive feature set that addressed the key pain points and requirements identified during the market assessment phase.

Simultaneously, we worked closely with our customers to develop an effective go-to-market strategy. By understanding their preferences, behaviors, and buying patterns, we were able to tailor our marketing and sales approach to maximize the product's reach and impact.

Throughout the entire process, open and transparent communication was key. We established multiple channels for dialogue, including regular meetings, email updates, and a dedicated feedback mechanism. By embracing a collaborative approach, we transformed our customers into partners and advocates for our product. They felt a sense of ownership and pride, knowing that their input played a significant role in defining the final offering. This collaborative journey not only resulted in a superior product-market fit but also fostered long-lasting relationships built on trust, transparency, and shared goals.

Case study: TECKRONE

Team composition

To successfully develop a product, the following team composition was involved:

Industrial Design (ID): The industrial design team focuses on the aesthetics, ergonomics, and user experience of the product.

Mechanical Design (ME): The mechanical design team handles the structural and functional aspects of the product. They are responsible for designing the physical components, mechanisms, and manufacturing processes.

Electrical Design (EE): This team is responsible for designing the electrical systems and circuits within the product. They work on integrating components such as sensors, actuators, and control systems.

Firmware Design (FE): The firmware design team focuses on developing the embedded software that controls and manages the hardware components of the product. They work on low-level programming, optimizing performance, and ensuring proper communication between different subsystems.

Software Design (SE): The software design team is responsible for developing the software applications that run on the product or interact with it. They work on higher-level programming, user interfaces, and backend systems.

Mobile App Design (SE): The mobile app design team specializes in creating the user interface and experience for mobile applications associated with the product. They focus on developing intuitive and engaging interfaces that allow users to interact with the product seamlessly.

Each team works collaboratively, ensuring integration and compatibility between their respective domains. They communicate and coordinate closely to achieve a cohesive and successful product development outcome.

Case study: T≡CKRON≡

Key challenge - subject expertise

Subject matter expertise required a specific domain knowledge for the development of smart doorbells, which encompass various disciplines, including hardware design, software development, security protocols, and user experience. Lack of subject matter expertise in any of these areas can pose challenges throughout the product development process.

Without hardware design expertise, there may be difficulties in selecting the right components, optimizing power consumption, ensuring reliable connectivity, and integrating the necessary features and functionalities.

Software development expertise is equally critical for smart doorbells. This includes knowledge of embedded systems, firmware development, mobile app development, and cloud integration. Without the necessary expertise, challenges may arise in developing robust firmware to control the doorbell's operations, creating intuitive and responsive mobile applications, and securely connecting the device to cloud services.

Another significant aspect is security expertise. Smart doorbells handle sensitive information, such as video footage and access control systems, making security a paramount concern. Understanding user behavior, interaction patterns, and designing an intuitive interface that caters to various user demographics is essential. Without the right UX expertise, the doorbell may suffer from usability issues, resulting in a suboptimal user experience.

It is crucial to assemble a multidisciplinary team with expertise in the relevant domains. This can include hardware engineers, firmware developers, software engineers, security specialists, UX/UI designers, and product managers. Collaborating with external consultants or industry experts can also provide valuable insights and guidance.

Case study: TECKRONE

Steps of the fully functional systems delivery

1. Hardware Delivery: This involved the production, assembly, and delivery of the physical hardware doorbell components along with any additional hardware peripherals or accessories necessary for its functionality.

2. Software Development: The software development process involves creating the necessary software programs and applications that enable the smart doorbell to function as intended. This included developing the firmware that controls the hardware, backend software systems for data management and processing, and any mobile or web applications associated with the smart doorbell.

3. Integration and Testing: Once the hardware and software components are developed, they had to be integrated and tested together to ensure seamless operation. This involved connecting the hardware with the software systems, verifying data exchange and communication protocols, and conducting thorough testing to identify and fix any bugs or issues.

4. Quality Assurance: A comprehensive quality assurance process is crucial to ensure that the fully functional system meets the desired standards of performance, reliability, and security. This included rigorous testing, bug fixing, and performance optimization to ensure a robust and reliable product.

5. User Acceptance Testing (UAT): UAT involves involving end-users or a representative user group to test the fully functional system in real-world scenarios. This allowed for validation of the system's performance, usability, and adherence to user requirements.

6. Deployment and Support: Once the fully functional system passes UAT and all necessary refinements are made, it is ready for deployment. This included delivering the hardware to customers, assisting with installation and setup, and providing ongoing technical support to ensure a smooth user experience.
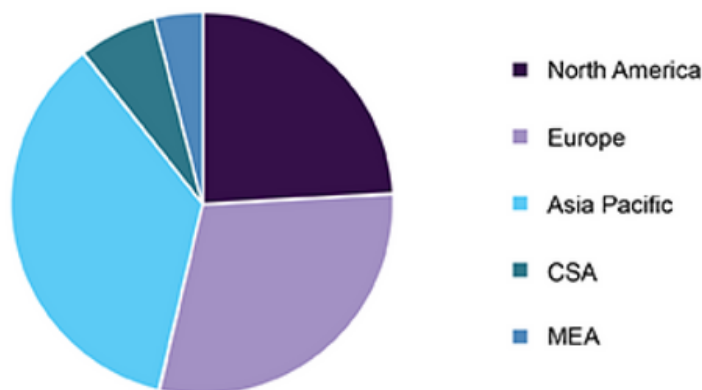
Case study: AQUAVIS

Customer's need

Introducing the Smart Water Filter Sensing System, a cutting-edge solution designed to revolutionize the way we ensure clean and safe drinking water. With increasing concerns about water quality and chemicals, it is crucial to have an advanced system that provides real-time monitoring and notifications. Our innovative solution combines state-of-the-art sensors, intelligent data analysis, and user-friendly interfaces to deliver a new level of confidence and control over your water filtration process. The Smart Water Filter Sensing System is the future of water purification, empowering you to safeguard your health and well-being with ease.

Global home water filtration unit market share, by region, 2018 (%)

- North America
- Europe
- Asia Pacific
- CSA
- MEA

Source: www.grandviewresearch.com

In essence, the evolution of the Smart Water Sensing solution has the potential to follow similar trajectory and focus as the Smart Metering IoT solutions as shown below in Fig.

Case study: AQUAVIS

Background

Did you know that the global market size for home water filter systems reached $11.48 billion in 2020? And it is projected to skyrocket at a compound annual growth rate (CAGR) of 15.9%, reaching a staggering market size of $24.11 billion by 2025. Just imagine the incredible potential and opportunities that lie within this booming industry.

In the United States, safe drinking water has become a mission critical project for both state and federal governments. Between 2017 and 2021, they allocated a budget of over $25 billion to ensure access to clean and safe drinking water. The White House has introduced an infrastructure bill in 2021 that aims to allocate $111 billion specifically for clean and drinking water projects.

The availability of these large-scale market opportunities and government grants presents a favorable environment for businesses operating within the safe drinking water sector. Various segments of the ecosystem can benefit from these opportunities. The report identifies several potential avenues for growth.

Case study: AQUAVIS

Customers as part of our team

Engaging with our customers as one team, we embarked on a collaborative journey to define our product and assess the market. Our approach involved close communication, active listening, and a shared vision to meet our customers' needs effectively.

We recognized the growing demand for smart technology integration in domestic water filter systems. To address this need, we introduced the Smart Domestic Water Filter Sensing, enhancing the functionality and convenience of our product.

By actively involving our customers in the development of the Smart Domestic Water Filter Sensing system, we gathered valuable insights into their expectations and requirements. Our customers expressed a desire for a solution that goes beyond traditional water filtration, providing real-time monitoring, notifications, and intelligent data analysis.

To define an effective go-to-market strategy, we collaborated closely with our customers to understand their preferences and explore the most impactful channels to reach them. We identified key marketing messages, customer acquisition channels, and pricing models that resonated with their needs. By leveraging their insights, we crafted a compelling strategy to introduce our product to the market and effectively communicate its value proposition.

![Utah Tech Labs logo — YOUR BUSINESS AUTOMATION ENGINE]

Case study: **AQUAVIS**

Team composition

Water Pressure Sensing Team involves engineers with expertise in pressure sensing technologies and diaphragm-based sensors.

Water Flow Sensing Team includes experts in flow sensor technology and its integration into the system.

IoT Device Development Team involves hardware engineers experienced in developing battery-operated IoT sensing devices.

Cloud Server and Analytics Team are made up of specialists in cloud server management, with experience in elastic servers like AWS.

Mobile Application Development Team includes app developers proficient in both iOS and Android platforms.

Integration Team is made up of hardware team from UTL focused on integrating differential pressure sensors and their data into the cloud-based analytics system.

User Experience and Account Management Team includes designers and developers responsible for creating an intuitive and visually appealing mobile app.
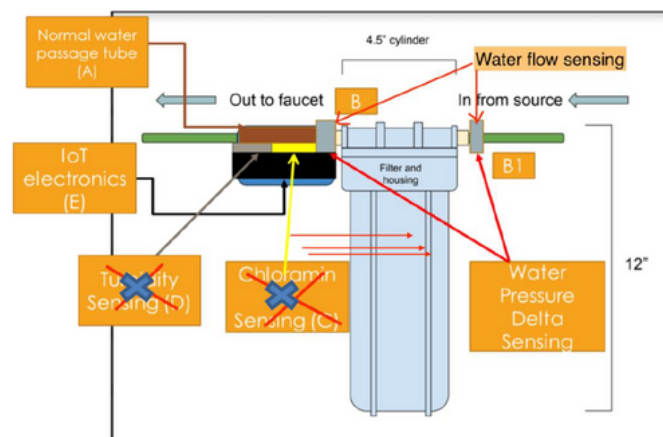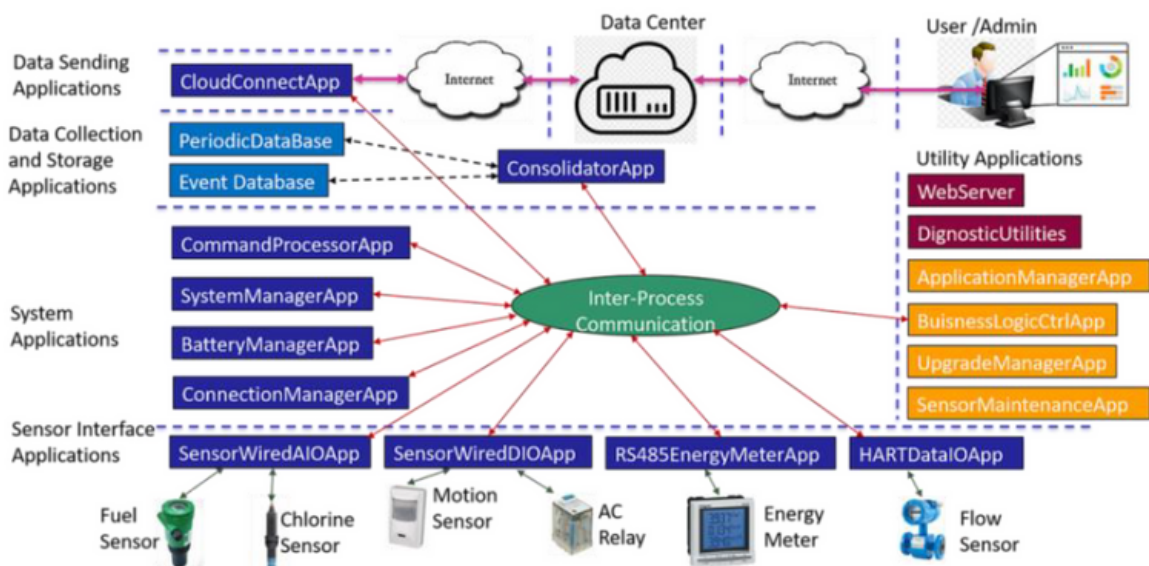
Case study: AQUAVIS

Key challenge - subject matter expertise

The smart domestic water filter project faces several key challenges related to sensor calibration and accuracy, sensor integration, data analysis, connectivity and communication, and user experience. Addressing these challenges requires a multidisciplinary approach, involving expertise in sensor technology, data analytics, networking, user interface design, and customer support.

Overcoming these challenges will ensure the successful implementation of a reliable and user-friendly smart domestic water filter system that enhances water quality monitoring and user satisfaction.

Case study: AQUAVIS

Steps of the fully functional system delivery

Our team worked on the solution of 4 component sections:

1. Mini-Lab Mechanical Device: Differential Pressure Sensing and flow sensing.

2. IoT Device: Electro-Mechanical Interface, Data communication, Control and Routine Operation, Interface with middleware (cloud) via API calls.

3. Middleware: Cloud hosted computing and IoT communication solution. This includes training and an inference algorithm running in batch and on-demand modes on the cloud server.

4. Front end Mobile App: Consumer notification and view connected with ordering system based on best available price and availability search
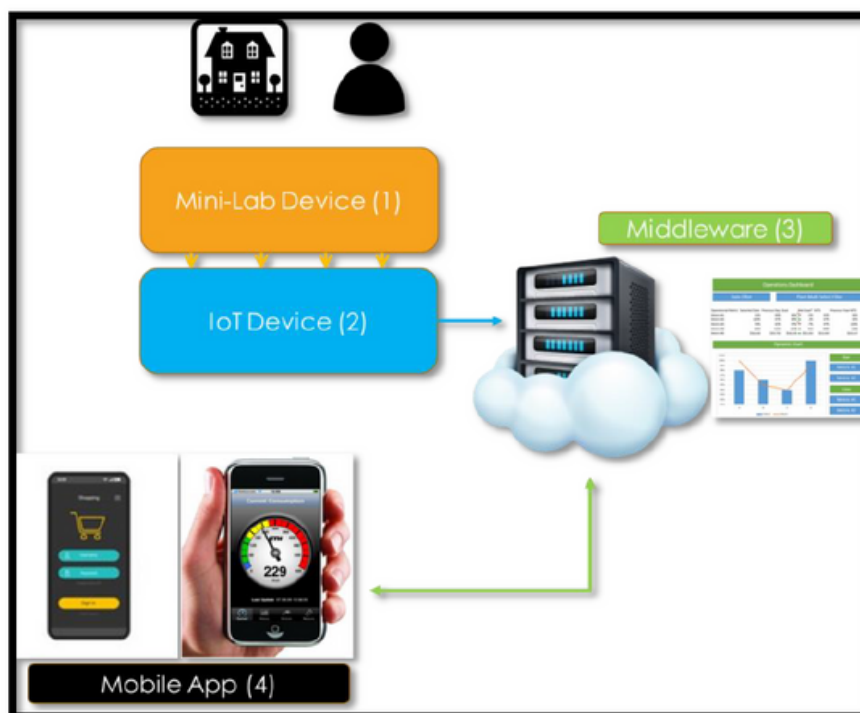
Conclusion

The disappointing results brought on by inflated expectations and the pressure to generate an instant return on investment emphasize how crucial it is for decision-makers to close the gap between their priorities and expectations. As a result, it becomes imperative to take a more thorough strategy when preparing for the IoT journey.

For seamless integration, quick deployment, and efficient support, it's essential to ensure alignment across the whole company. Businesses can increase their chances of accomplishing their IoT objectives and maximizing the overall results of their IoT activities by giving this alignment top priority.

Appendix

About Utah Tech Labs

Every innovative and result driven digital solution in one place.

Utah Tech Labs offers unmatched expertise in digital transformations. We offer technology services to make you an autonomous enterprise and build your own digital vision. Our solutions and products turn IT into a strategic asset, while our futuristic ideologies will help you in the long run with business challenges such as automation, service management, and other complex operations.

We focus on quality, innovation and speed to enhance your business performance.
Our end-to-end IoT solutions and partnerships with leading tech providers address a wide range of business challenges in key markets: real estate, food services, retail, manufacturing, healthcare, travel, industrial, and agriculture. For more information, visit www.utahtechlabs.com

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