2021 SUMMER EDITION

THE STATE OF
IoT
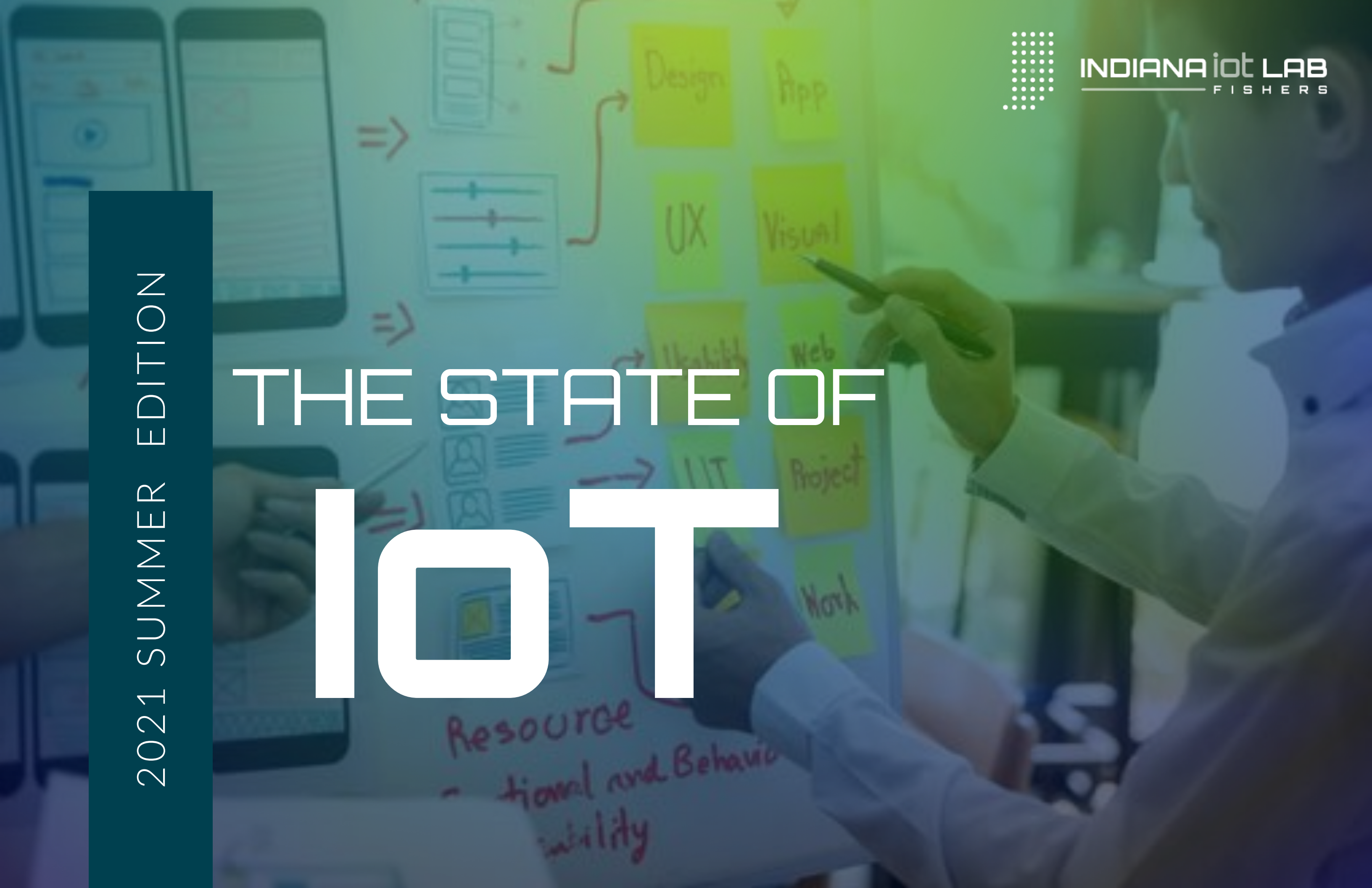
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A Letter From The Lab

Dear Readers,

It's been an interesting year and an even more interesting period in the evolution of connected tech. In recent years, we've seen the internet of things move from novelty, to expectation, to necessity. Today, nearly everyone makes use of a connected thing. Whether it's a phone, a watch, a car, or a variety of things at home or in the office. the reach and growth of connected tech is difficult to ignore.

While technology is ideally being designed to improve our daily lives, there is no doubt that confusion and complexities are generated from our increasing digitalization. For example, I love the Apple Watch, but find a certain irony in the term complications to describe the shortcut assignments on the my faces menu. These complications however, simplify my activities by delivering the right information aligned with my preferences- Perhaps it's a passive reminder that we need intuitive design and efficiencies designed by people for people to use.

Right here in Indiana, New ideas and innovations are emerging that not only aim to reduce complexity, they also consider our interaction and our engagement. It's seemingly an evolution of multi-dimensional UI/UX aligned as much with our Digital assistants and ongoing interactions as it has been with experience in the past.

In this summer edition of The State of IoT, we highlight companies and ideas that are aiming to make our interactions with tech easier, more intuitive, and above all, designed with a human element.

Thank you & happy reading!

Jason Pennington

Executive Director | Indiana IoT Lab

Finding the long view in iot strategy

> If you were asked, "What is your long term IoT strategy?" How would you answer the question?
>
> - Mike Peck |
>
> President |
>
> Outside Source

Finding the long view

If you were asked, "What is your long-term IoT strategy?" How would you answer the question? Perhaps you seek cost efficiency, improved user experience, or the monitoring and remote control of your devices. In any case, these examples are just the beginning of what is possible.

Outside Source helps organizations strategize and implement for long-term IoT success, and we understand exactly what pitfalls you can face without a long-view strategy.

Oftentimes, firms dip their toe in the water with IoT by connecting their consumer product to the internet. They make it "smart". Simple use cases are then developed (on/off capabilities, data monitoring, mobility), and as more of the company's products become "connected", data silos and disjointed user experiences can result. Hardware, software, and connectivity decisions made early on will impact the options the company has as they scale their IoT program.

To build a mature IoT competency, organizations should develop a strategy with the big picture in mind. This view takes into consideration five stages of maturity, with each stage building a foundation for the next paving the way for a higher ROI.

For companies with mature iot competency, the greatest outcome is that their product has escaped commoditization and no longer has to compete on price.

5 stages of Iot maturity

1. Collect data - keep it simple. Leverage mobile and web apps. Collect data at this stage with newly connected products in a cloud-based structure. Decisions made at this stage are done with future stages in mind.

2. Aggregate data - data sources are pulled together to provide internal and external value. Visualization and analytics for customers and business stakeholders provide insights into product use.

3. Control - Create digital twins that represent the product, its control capabilities, and its automation potential. True innovation begins here as new levels of customer experience, product behaviors, and product life cycles present themselves.

4. Accelerate revenue - successful outcomes from stages 1-3 should be developing an iot platform that includes data integration, business system integration, and reporting tools. New business models, "data-based offerings" and downloadable upgrades can begin to accelerate revenues.

5. Create an ecosystem - connecting and integrating the smart products of partners, customers, and suppliers not only enhances Iot platform's value proposition, it also enhances the value of the products in a customer's smart network.

We move companies forward

Let's Chat.   HTTPS://WWW.OUTSIDESOURCE.COM/CONTACT-US

Designing Accessible data.

-Dustin Elery |
CSpring

Making better decisions with data doesn't simply happen. One could reflect on a somewhat ancient phrase- "what do the numbers tell us?" Today, a more insightful evolution might sound like "what's the story behind the data?" Just like the technology requirements and capabilities to connect and design data driven systems has evolved, so too has our mindset towards what we can achieve with data driven decisions.

a successful data driven roadmap is vital for organizations that speak to a Digital transformation. This goes beyond the classical idea that bad data presents bad results or bad data is better than no data. It's not about reports. The successful data driven roadmap begins with an end in mind. It's a function of culture. It describes and communicates- 1. Where are we? and 2. Where do we want to go? Considering the stakeholders and users within this roadmap, c spring employs a process called thoughtful planning.

> "How do we design and present data that is reliable, engaging, and accessible?"
>
> -Dustin Elery |
> Director of Data and analytics |
> CSpring

Designing intuitive data visualizations is a process

With thoughtful planning, Our outcome goal is centered around the individual and what question they are trying to answer. it's also important to consider their opportunity to succeed with that answer. Success is achieved when data is reliable, but also engaging and accessible.

Intuitive dashboards are interactive and often consider factors like how much time someone has to view a visualization. It considers how many times are they able to drill down or should they even have to. Another growing area of importance is not only who needs the data, but rather, where and when do they need it and what type of device might they be using. The idea is designing and delivering the answer to a critical question without the environment having an impact on the answer provided.

In short, less is more and clutter does not provide more information. In fact, it might even hide the answer.

C spring approaches data driven engagements with multi-dimensional teams. These teams encompass architects, scientists, experiential, and consultative skill sets. The multidimensional team is not complete without the customer and their unique personas and stakeholders.

Informed design, with the customer ensures that unique business goals are achievable, attainable and architected with the right people at every stage of the solution development. Interoperable tools like Tableu, snowflake and fivetran provide a comprehensive and proven architecture that can be developed to ensure that data is visualized, connected, integrated and secured in stand-alone or disparate systems to the user.

This provides a unique outcome of leveraging only the data that's needed. This strategy has demonstrated improved quality, speed, and simplicity to understand the story behind the data.

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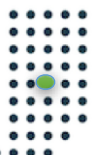
The power of voice.

-Gary Roberson |
The Audio of Things

While our ability to make sounds or even raw noises can be described in a neural or biological sense, it's speech that makes us uniquely human. While our ability to leverage speech for dialogue is perhaps a common thing for many, it's actually fascinating when you think about it. Being connected in the purest sense lies in our ability to communicate. To be understood and ultimately, to understand however, is something different.

In our increasingly connected world, the power of voice is not only a means to provide connection, it provides an opportunity for interaction and dialogue as voice technologies improve and mature in a variety of markets and applications.

Learn more:
http://taot.co

" Our ability to communicate with the digital world is becoming more of an interaction or dialogue as voice technologies improve and mature in the market."

- Gary Roberson |

Co-Founder & COO |

TAOT

Voice systems are tested and trained to function in the real world

The TAOT team has been involved in acoustic engineering from the dawn of multi-person conference phones, the creation of smartphone MEMS microphones, a variety of high-quality acoustic processing systems, and the emergence of voice activation. Although its roots trace back more than 50 years, electronic aided voice technology has been exploding with the onset of connected ecosystems and IoT capabilities such as cloud computing and edge processing. As the digital assistant became near-ubiquitous in homes, on our smart devices, augmenting our hands-free cars, and other consumer technologies, growth in voice technologies continues to expand.

Foundational technologies like speech recognition, natural language processing, and voice AI are enabling an ever growing number of use cases. In the current state of voice technology, industry-specific applications and verticals are growing fast. Providing this contextual basis for even more powerful dialog and connected experiences are exhibiting gains that can be measured in terms of productivity, efficiency, and rapid adoption rates. These advances are being made possible when voice leads to communication rather than simple actuation- that's where The Audio of Things leads to improved engagement.
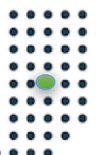
Uniquely you.

-Ben Robertson |
Simpello

White glove service. As a customer, it's easy to fall in love with a great experience. For many venues and operations, the idea of generating customer loyalty ranks higher than providing a great experience. Sometimes it's difficult to provide highly thoughtful and powerful interactions. Although our desire to provide highly thoughtful service is sometimes impacted by circumstances that are out of our immediate control, we can't always expect that our customers will lower their expectations.

One of the core problem statements for the Simpello team has been - "how can we make the process of serving customers and guests as comfortable, safe, and seamless as possible?" The answer became identity. While identity is not a new frontier, the ability to adapt and align identity technologies for more unobtrusive and personalized workflows has become a powerful and enabling foundation for Simpello.

Learn more:
https://simpello.co

"
how can we make the process of

serving our customers and

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and seamless as possible?"

- Ben Robertson |

CEO |

Simpello

PERSONALIZED Engagement with Identity tech

Imagine the next time you log in to an online shopping account, streaming service, or check an app, the data presented is being catered to your habits, past transactions, and possibly some form of geographic information. Generally, we've come to appreciate, if not condone, the usage of data to promote targeted suggestions. In the physical world, however, these recommendations become vague, if not impersonal. Simpello bridges this gap by providing a wireless, temporary connection between two parties. In principle, this is Similar to the idea of providing basic information via a user name, ID, and password.

By deploying a hardware-enabled software platform with our clients, Simpello is helping to deliver powerful engagements that are uniquely for you. Transaction zones are created with specially tuned radio waves to create data zones. These data zones are created by optimizing wireless technologies like Bluetooth and UltraWideBand (UWB). Application-specific transaction zones help to ensure privacy and data safety while promoting and prompting highly personalized interactions.

In the current stage of deployment, Simpello is printing tickets, serving up recommendations, allowing check-in, and even promoting dialogue without the need to scan a QR code or download another app. Once integrated into a venues existing physical and cyber-physical systems, The Simpello transaction zone responsibly protects user data by gathering only an amount being shared or registered. Our approach has been to leverage data to enhance an experience or an engagement at the time it is needed.

As a future release, we're working to extend the use of artificial intelligence and machine learning features. These features are strategically being released with industry-specific contexts in order to minimize the amount of customer data needed for meaningful dialogue. Our goal is to deliver an even more personalized experience for customers while providing facility operators such as restaurants, retail, and customer kiosks with more options to improve efficiency while minimizing the risk associated with data privacy.
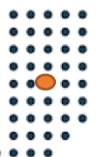
IMPACTFUL INNOVATION.

-Calvin Hendryx-Parker | Six Feet Up

The future of technology is less about people doing things with technology — and more about what technology can do for people. From genetic engineering to crop management and space exploration, every day, developers implement impactful innovations that benefit humankind.

However, most people don't think about the technologies or the code used to power their devices. Whether the end-users are scientists developing vaccines, farmers watering fields, or researchers plotting points in space, end users are more concerned with how technology makes their lives easier. When companies need help developing technical solutions, they come to Six Feet Up.

Genetic Engineering
Genetic engineering has resulted in life-saving improvements from drug discovery to vaccine development and industrial biotech. Seemingly every day, new technologies are launched to help scientists analyze genomics data faster, more accurately and at a lower cost. Six Feet Up helped a major life sciences company build a Python-based Angular/Electron application that interfaced with a device to improve genetic engineering workflows. Today, this device is being used by scientists in laboratories around the world.

> " From genetic engineering to crop management and space exploration, every day, developers implement impactful innovations that benefit humankind."
>
> -Calvin Hendryx-Parker |
> Chief Technical Officer |
> Six Feet Up

People designing technology for people

Crop Management
Enhancing crop management and performance is critical to advancing the global food supply chain. Leaftech Ag, Inc. — a 5th generation farming, family-owned company that is commercializing an integrated handheld "Digital Lab" that analyzes a plant's leaf for nutrient and chemical composition — is focused on providing farmers in both first- and third-world countries the ability to apply the precise inputs (e.g., water, nutrients, etc.) for optimal yield and crop quality, developing real-time actionable recommendations in hours instead of days. Just think how much farmers could benefit from knowing when to apply the correct inputs, in the right amounts, at the optimal time and location. Six Feet Up is helping bring Leaftech Ag's handheld scanner to life by improving code, debugging the software, troubleshooting the hardware, and tackling connection issues. The "Digital Labs" — which will deliver results that are 98% faster and 90% less expensive compared to current practices — are expected to be released in the coming months.

Space Exploration
Contributing to the human space odyssey is a memorable opportunity. When NASA sent a space probe to Pluto, they asked Six Feet Up to help migrate scientific data sent from the New Horizons Satellite to a new Plone-powered intranet. Six Feet Up developed a portal that provided scientists with robust tools to help make sense of the data, including the ability to create custom plotting charts. Among other features, the portal allowed researchers to narrow down the results shown by specifying start/end dates and times; add/edit ad-hoc plotting charts; and export data as a PNG file.

Six Feet Up's expert developers have had the privilege of working on impactful projects with clients around the world. Using modern technologies and best practices, Six Feet Up aims to Make Anything Possible™ for its clients.

six feet up
python & cloud expert consulting

Learn more:
https://sixfeetup.com

Learn more about the Indiana IoT Lab at:
https://indianaiot.com

Or book a visit to network with our members,
sponsors, and partners in person at

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