

INTERNET OF THINGS, GET INTO TOP GEARS DURING THE PANDEMIC PERIODS: DECODING COVID-19'S IMPACT ON ENTERPRISE IOT

Dr Sudheer Mar*

Professor and HOD, Department of MCA, Nehru College of Engineering and
Research Centre, Thrissur, Kerala.

Pramod K*

Senior Assistant Professor, Department of MCA, Nehru College of Engineering and
Research Centre, Thrissur, Kerala

Ashish L*

Assistant Professor, Department of MCA, Nehru College of Engineering and
Research Centre, Thrissur, Kerala

*Corresponding authors | Received: 03/03/2022 | Accepted: 20/03/2022 | Published: 28/03/2022

Abstract: *Despite the many apparent negatives of the worldwide COVID-19 pandemic, in a strange way it could end up providing the spark that many have felt has been desperately needed to make IoT a critical part of many companies' strategies. Recently in a Pelion sponsored webinar, discussions were on the state of IoT in our new reality, several IoT industry veterans came together to share their wisdom on these topics and other recent developments., commenting "Companies working in critical verticals, like logistics, farming, and health care will face higher demand and therefore need to improve their processes to be more efficient.*

Introduction

As the world adapts to the 'new normal', the paper tries to explore some of the many impacts COVID-19 is having on the IoT domains. In most simple terms, if we've learned something from the worldwide pandemic, it is that some things are truly essential, and others really are not. In the tech world, Internet of things (IoT) -related projects are coming under scrutiny and are seeing their relevance and importance grow quickly and dramatically.

Despite the many apparent negatives of the worldwide COVID-19 pandemic, in a strange way it could end up providing the spark that many have felt has been desperately needed to make IoT a critical part of many companies' strategies. Recently in a Pelion sponsored webinar, discussions were on the state of IoT in our new reality, several IoT industry veterans came together to share their wisdom on these topics and other recent developments., commenting "Companies working in critical verticals, like logistics, farming, and health care will face higher demand and therefore need to improve their processes to be more efficient."

Pandemic will accelerate IoT adoption

IoT is ideally suited for these types of process-oriented applications and their importance has never been more apparent, hence the accelerated adoption of IoT. But these aren't the only types of IoT applications that are being given new prominence in our rapidly changing world. Today, there's a whole range of new and 'rediscovered' applications where even some existing IoT products and services can play a new role.

IoT services were highly fragmented before COVID-19 struck, but the pandemic has created central use cases that should lead to more unification and a reduction in fragmentation. An example of this is remote or telehealth services. The world witnesses some urgency from consumer companies trying to fill that need, so think about wearables and health monitoring and how they can relate to telehealth.

Telehealth is a particularly interesting example because it's not a new application; it's been around for years but is just now being "rediscovered." In fact, telehealth and all the types of data collection and health monitoring devices and services that are associated with it have taken on a significantly higher level of importance because they represent something that the medical industry needs and that consumers want. At present, its demand is out of necessity more than anything.

Once people have experienced a remote health session with a physician or other medical professional, many recognize that it's more efficient and better suited to a number of situations than traditional healthcare models. Meanwhile, we can easily predict that telehealth application usage will likely remain high, even after we return to a new normal. It's a classic case of an IoT-related application—and there are many others—that always seemed like a great idea yet needed some kind of trigger to move to the mainstream.

Another example of a potentially great IoT application whose value has suddenly been redefined in a whole new way is remote monitoring, both of devices and even spaces. Things like remote management become more important in the COVID world because it reduces the need for employees to go out and physically check on devices. In addition, occupancy and space management is coming to the fore as organizations turn to IoT applications to remain COVID-compliant as they return to work.

New approaches hurries up tricky POC stages

In addition to these specific IoT applications, there have also been new approaches that expedite the proof-of-concept (POC) stage, where many IoT projects, unfortunately, often get

stuck. Long-held market positions about consumer behavior are being upturned as we speak, so previous POCs have to be revised. There's a need to go back to the lab and that might mean that some things are now better suited for moving to production than they were initially perceived to be, while others may prove to be less viable than first thought.

In addition to these practical issues, there are other organizational and technological challenges that have to be, and are starting to be, overcome for widespread, highly valued IoT deployments to occur. One of them involves the political turf wars that often occur within organizations over which group is leading or enabling an IoT project.

The classic one for IoT is the battle between the OT, (Operations Technology) people and the IT staff. The OT people want to keep everything within their control, but there is a communication challenge with the other island, which is IT. The lack of visibility between the IT world and OT world continues to be a big issue for IoT. One potential solution to this issue in the form of a key new technology: 5G. M2M applications linked via 5G is where the two worlds will start to communicate with each other, seamlessly.

Another critical factor that's just starting to shift is vantage points inside the IoT world. Device management has to be integrated into the product and not just be an afterthought. Connectivity and networking are an integral part of the product, so the secure device management requirement comes in quickly. That evolution is just happening now.

Another key stuff, is the issue of business model, a long-term challenge for many IoT projects, products and services and its critical, but not always apparent, ties to security. The pilot has to consider the economics of a full production system. If companies do that, security naturally comes to the fore because any production system has to have reliability, it has to have system integrity and that leads back to choices made around the device, the system and how that system is deployed and operated.

Case study: Voice of the Enterprise IoT Organizational Dynamics

Enterprises that have accelerated their IoT deployments during the COVID-19 pandemic can be identified by their past project success and confidence that their efforts can deliver strong financial and competitive benefits. Referring to our Analysis of Voice of the Enterprise: IoT Organizational Dynamics survey results, we define two distinct enterprise 'personas' – firms that accelerated, and firms that slowed their enterprise IoT deployments – to understand the dynamics and profile of each type of decision maker.

Overall, enterprises appear to continue being bullish on IoT during an otherwise very

challenging 2020. Few of the survey respondents (just 3%) said they have stalled IoT deployments altogether, while a majority (63%) either maintained or accelerated their deployments. Certain respondents also reported interest in using IoT to address new, specific COVID-19 challenges – with 32% saying they already are planning new IoT applications in response to the pandemic, and another 43% saying they could envision using IoT for that purpose in the future.

However, not every enterprise can afford to be so steadfast in their IoT planning in such difficult times. Not every enterprise IoT buyer is created equal. Understanding why and how they differ is critical. When it comes to the key question of how enterprises have adjusted their IoT plans in the face of COVID-19, past successes and a bullish outlook on the strategic value of IoT appear to make all the difference. The successful and confident have doubled down on enterprise IoT in 2020, a dynamic that has the potential to widen the gap between winners and losers in the future, depending on how those bets pan out.

Understanding COVID-19's impact on Enterprise IoT

Our research analyzed the COVID-19/IoT Accelerator and COVID-19/IoT Delayer personas as part of the work.

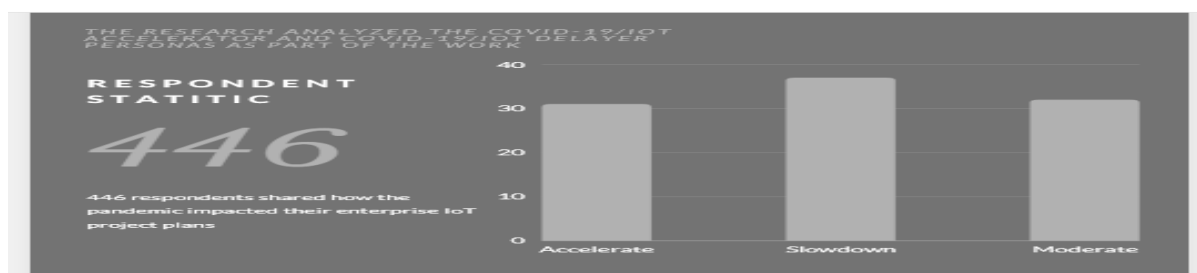


Figure 1: Basic Respondent Statistics

Overall, 446 respondents shared how the pandemic impacted their enterprise IoT project plans: 31% accelerated, while 37% slowed their projects. This created the two personas we used in our analysis (another 32% reported no change in their project plans). Some of the more notable takeaways from comparing those two groups can be found in the figure below.

COVID/IoT Accelerators	COVID/IoT Delayers
Enterprises <i>accelerating</i> IoT project deployments in the face of COVID-19:	Enterprises <i>delaying</i> IoT project deployments in the face of COVID-19:
Have a better sense of their return on IoT investments	Feel they face many more barriers to IoT success
They are more likely to track IoT project ROI (69% vs 58%) and report a very positive ROI (51% vs. 19%) than IoT/COVID delayers	They are more likely to report IoT budget concerns (46% vs 23%), lack of in-house skills (32% vs. 16%) or security concerns (51% vs. 34%) than IoT/COVID accelerators
Are focused on IoT's impact on the top line	Are focused on IoT's impact on the bottom line
48% cite leveraging IoT to 'develop and monetize new products, services and customers' vs 39% for IoT delayers	56% cite leveraging IoT to save money vs 48% for IoT accelerators
Are bullish on IoT's financial impact	Are bearish on IoT's financial impact
75% say they expect a game-changing or strongly positive EBIDTA impact from their IoT investment in the next two years	74% say they expect a moderately positive or no EBIDTA impact from their IoT investment in the next two years
Are more likely to be IT-led in their IoT initiatives	Are more likely to be OT-led in their IoT initiatives
72% say IT (rather than OT) takes the lead on IoT projects vs 55% reporting IT in the lead at IoT Delayer enterprises	40% say OT (rather than IT) takes the lead on IoT projects, vs. 26% reporting OT in the lead at IoT accelerators

Figure 2: IoT Accelerators v/s Delayers

Major Characteristic findings

- COVID-19/IoT Accelerators are much more optimistic about their IoT prospects. Three-quarters of our Accelerator group said they are deploying IoT with the expectation of 'strongly positive' or 'game changing' impacts to their earnings. Enterprises enthusiastic about IoT's potential financial and competitive impact were much more likely to move ahead aggressively this year.
- Past project success increased confidence to accelerate even in the face of the pandemic. Respondents that were part of the Accelerator group were much more likely (51% vs. 19%) to have achieved a 'very positive' RoI on past IoT projects versus Delayers. Past success not only kept their IoT projects prioritized, but led such organizations to excel in their efforts during the pandemic.
- A focus on IoT monetization rather than just cost savings kept IoT projects rolling. Respondents to our IoT survey have consistently prioritized saving money and optimizing operations as top IoT project drivers. Respondents who are counting on their enterprise IoT projects to drive product or service innovation not only held steady but accelerated their IoT projects this year.
- IoT projects for the COVID-19 were more likely to be led by IT, while the Delayer group was more likely to be OT-led in their efforts. This distinction speaks to the role of each group – information technology and operations technology. Within IoT deployments, IT has evolved to accept its central role as technology implementor, while OT typically looks after business value and outcome considerations.

Conclusion

The shift to a “new normal” has not only allowed but essentially forced companies to take a clean slate approach towards how they can digitally transform themselves into more efficient, effective organizations. From healthcare companies jumping on the newly inspired telehealth movement to logistics companies rethinking supply chains to companies across the board radically shifting how and where their workforces can operate, the impact of the pandemic has brought about some game-changing new ideas regarding how companies function. In many cases, these transformative efforts can be inspired and informed by IoT-related projects.

Rather than being overwhelmed by current challenges, forward-thinking organizations need to turn this crisis into an opportunity. They need to re-envision how their business processes work and how they can adapt to our new realities and leverage the tools available to them to achieve these changes. Only then will they be able to position themselves as the type of agile organizations that the future will likely demand, in the IoT based domains.

References

1. Kinda Chebib, *Insights Manage Tech: IoT applications in the fight against COVID-19*
2. Rich Karpinski, *Technology, Media & Telecom on Market Intelligence Platforms*
3. Voice of the Enterprise: IoT Organizational survey : Pelion Dynamics, *Pandemic puts IoT projects in new light*