



## IOT TESTING

The [Internet of Things](#) is on its way to become the biggest software development and testing opportunity of all time.

IoT brings many new things to the table in terms of testing requirement , including quite a few unusual device types like home appliances, watch sensors etc.

With such an eclectic mix of products in the IoT ecosystem, it becomes [imperative for the QA team](#) to come with an effective test strategy to meet the quality of these diverse products.



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## BENEFITS OF IOT TESTING

- **Improve Engagement:** IoT Testing ensures that the end users get best-in-class user experience across multiple channels (device, web, mobile)
- **Future-proof the business:** IoT Testing provides an integrated approach to validate the practical and non-functional requirements of the IoT solutions. It also future-proofs the business by ensuring interoperability, security and performance testing
- **Accelerate Time-to-Market:** IoT testing ensures faster time-to-market by leveraging early automation.



*M2Q ensures faster time-to-market by leveraging early automation.*

## CHALLENGES OF IOT TESTING

- The **ever-increasing number of applications** that are being developed continually expands the Internet of Things (IoT) ecosystem.

*With such rapid expansion, organizations need to ensure that these applications are continuously and thoroughly tested before being implemented in this connected world of devices we call IoT .*

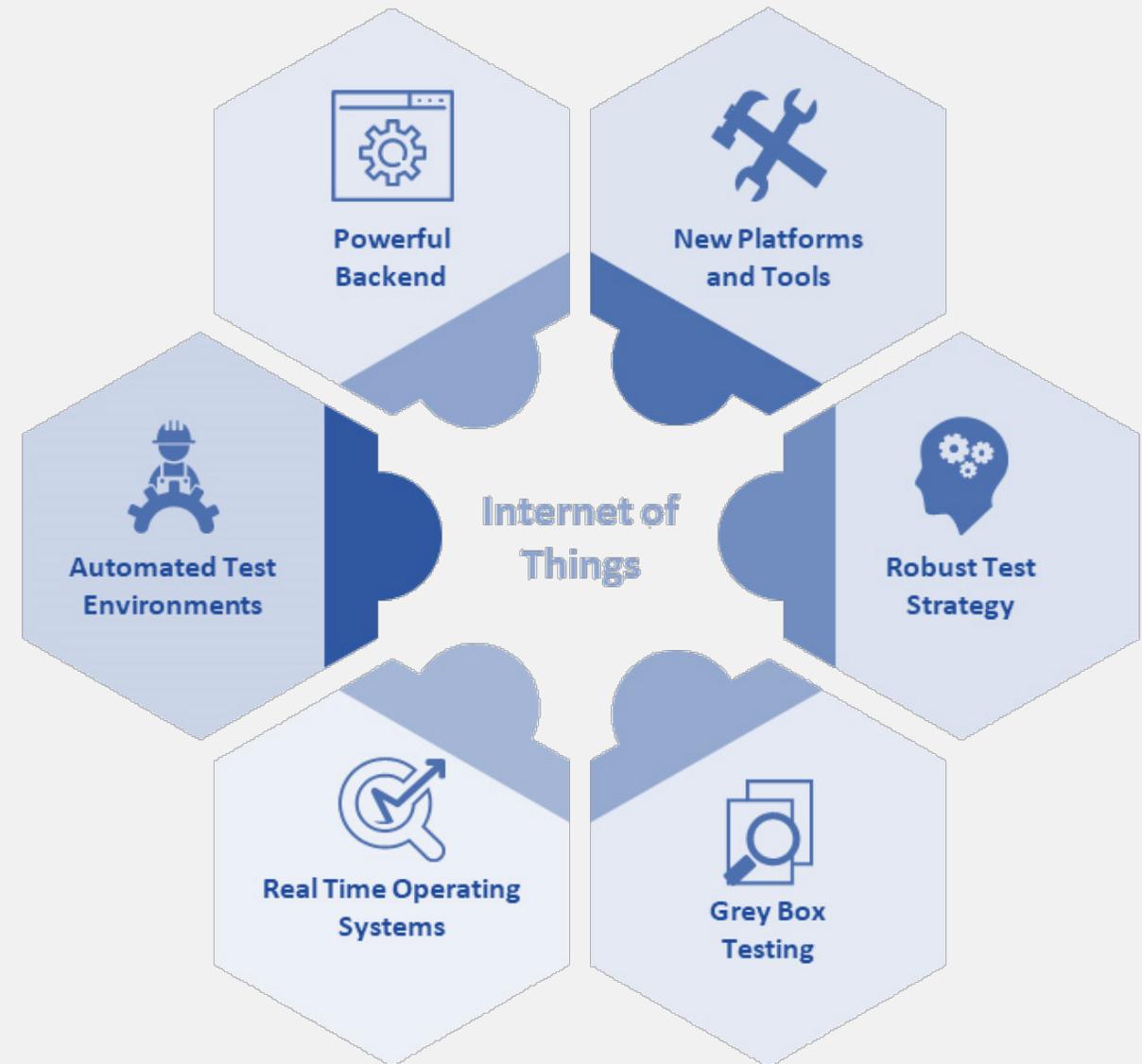
- The role of **QA becomes critical** as such a set up involves testing hardware and software and the connectivity which helps in transmitting such huge amount of intelligence.
- It becomes **imperative for us to be aware of the challenges** associated with IoT Testing before we can come up with an IoT Testing framework that would help us handle these challenges.

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## HOW DOES IT WORK?

Though designing a **framework depends on the various types of devices involved** in the IOT ecosystem, some basic features that should be part of the IoT Testing framework are listed below:

- **Protocol simulators:** An IoT set up involves working with multiple protocols. Protocol Simulators would be very handy when there is a lot of variation in the device end points and their interfaces.
- **Data Recorders:** Data recorders from different types of devices can be helpful in smart validation across device sets the recorded data can be played across different device end-points automatically, which in turn can be a great enabler in compatibility testing of apps across different device sets and communication layers.
- **Virtualization:** The highly complex nature of the IoT ecosystem would make real-time validation of the application behavior very difficult and time-consuming. Therefore, introducing sufficient amount of virtualization into the services on which IOT applications are built will result in faster turn around and reduced costs due to minimal dependency on the real-time environment. It would also lead to earlier detection of defects.
- **Building Labs** that serve the entire digital portfolio to experiment and simulate real-time experiences which would help us inform smarter ways of testing.



# WORK TOGETHER?

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