Wapice

How to Build an IoT Strategy for Your Company

In this whitepaper we'll look at the benefits of IoT and investigate ways of adopting IoT, AI and analytics to achieve cost savings and valuable insights from your data.

You'll want IoT solutions in your company if:

› You want to reduce costs, optimize operations and find new revenue streams.

› You want to get insights from real-time data and analytics to make smarter and faster decisions about your business.

› You want to achieve proactive automation and analytics to improve maintenance and supply chain operations.

Key takeaways:

› Don't build IoT from scratch unless you have a really good reason for doing so.

› IoT projects should always focus on business activities and end users' requirements.

› Data is only valuable when you extract something from it and this is what many businesses are still figuring out.

› Time invested in planning the processes that use and generate data can create considerable business value.

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INTRODUCTION

IoT devices connect the world of hardware to the Internet and each other. They help to provide control to the edge, feed data to IoT platforms, and enable the production of insightful information for the end user about their business processes. With the rise of more alternatives and cheaper prices in sensors, the connectivity possibilities become abundant, so it's not surprising that companies are now eager to look for solutions in IoT, edge, and AI to help gain more insight and intelligence from the data. Now is the time for it as the necessary technologies are estimated to reach the famous 'plateau of productivity" in 2-5 years.

In this whitepaper we'll look at the benefits of IoT in business and investigate the ways of adopting IoT, AI, and analytics to achieve cost savings and valuable insights from your data.
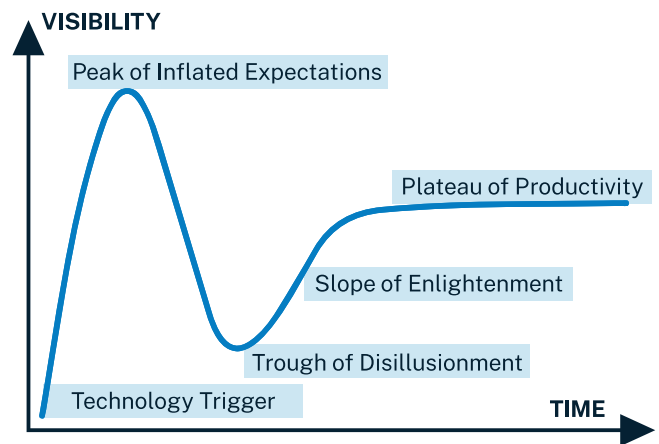
IoT projects should always focus on business activities and end users' requirements. The fundamental question to solve is how to find extra value and more refined insights from data. After all, data collection and hardware are the simpler pieces in the equation.

Control your data, gain insight and intelligence, find extra value from data

VISIBILITY

Peak of Inflated Expectations

Plateau of Productivity

Slope of Enlightenment

Trough of Disillusionment

Technology Trigger

TIME

To realize the full potential of IoT, and for businesses to benefit from it, analytics must be a top priority.

Typical applications for IoT:

The current landscape for advanced IoT applications is divided into industry, environment, living, transport and health.

Industry	Environment	Living	Transport	Health
Agriculture	Monitoring	Social networks	Smart transport	Healthcare
Mining	Smart grid	Entertainment	Smart City	Fitness
Supply chain		Smart home		Food safety
Smart factory				Fire safety

DATA AND IOT, WHAT DO THE MARKETS SAY?

IoT analytics is expected to have a continuously growing market. Some of the biggest contributors to that are lower setup costs and better platforms. Other key factors driving the IoT market include the high growth of IoT data generation and the need for advanced analytics and automation for businesses using these technologies. Market sentiment indicates that software innovation and adoption will remain as the core focus for end users.

Industry 4.0 reports indicate that the adoption of new solutions in IoT and AI is fastest in the automotive industry followed by electronics, mining, and process industries. The most innovative companies have a forward-thinking strategy, have compelling use of new technologies on their own products, and are willing to be pioneers and early adopters to gain market readiness.

The amount of data generated through IoT connected devices is staggering. It has been estimated by the IDC that more than 2.5 quintillion bytes of data are produced a day by IoT devices. This data is only valuable when you extract something from it and this is what many businesses are still figuring out. To realize the full potential of IoT, and to create business from it, analytics must be a top priority. Organizations need the right tools and processes to act and react to the collected data.

WHAT CAN WE SEE MORE OF IN THE COMING YEARS?

Mickey Shroff, Head of AI at Wapice says: "There is a large potential still in the healthcare industry and particularly for the elderly living at home alone. It can be anything from smart care and safety solutions to early care intervention and an increased feeling of independence and safety. It is really true that there is a sensor for any given situation. The Healthcare industry can greatly benefit from this fact to improve the real-time situation awareness of caregivers. Safety can also be increased in a lot of different industries using edge and computer vision. For example, building sites and warehouses benefit from systems using video surveillance that detects and alerts when safety equipment such as helmets are missing or a person has fallen unconscious in remote areas. In the future, we will see even more commercialization of solutions from intelligence gathered and aggregated from our daily activities. The future will be super exciting. Solutions that impact our society serves us all!

It is really true that there is a sensor for any given situation.

Mickey Shroff, Head of AI at Wapice

THE MANY FACES OF INFORMATION

Information from collected data is often very diverse, heterogeneous, and often unstructured. The evolution of analytics has progressed from business intelligence to big data analytics and into integrated, agile, rapid insights yielding an ecosystem of analytics.

Value hierarchies can be used to divide information into the following levels:

› Descriptive › Diagnostic › Discovery › Predictive › Prescriptive
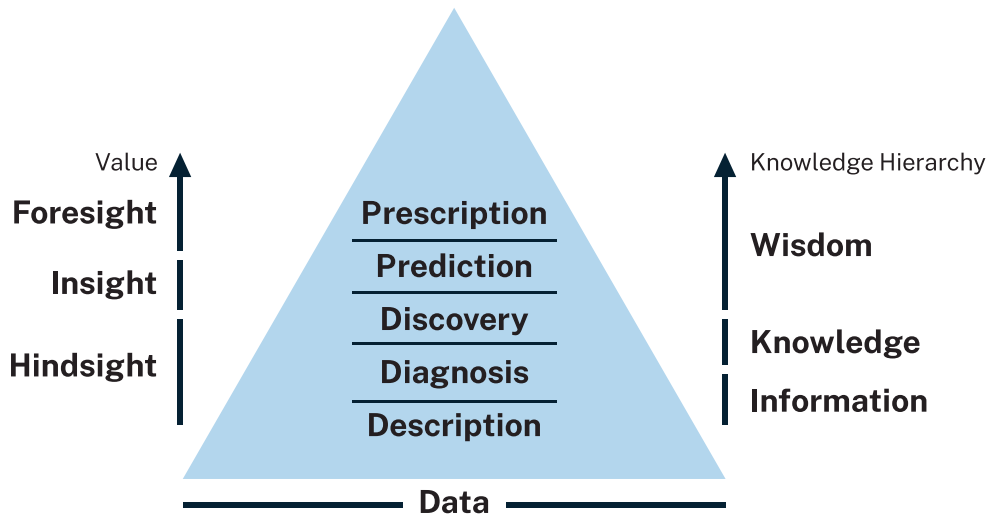
These levels help to organize and refine desired outcomes from the data. Most of the data can be turned into descriptive information for example with the following methodologies: classification, trend analysis, and video analytics, etc. Some forms of data are better for knowledge discovery or prediction such as text and time series.

The final levels in the value hierarchy can provide foresight and prescriptive information to support business and trend analytics. Understanding the data available to you is the key to get more refined insights from it. Time invested in the planning of the processes that use and generate the data can turn into considerable business value.

Understanding the data available to you is the key to getting more refined insights from it.

Analytics	DESCRIPTIVE	DIAGNOSTIC	DISCOVERY	PREDICTIVE	PRESCRIPTIVE
Visual Analytics	●	●	●	●	
Data Mining	●	●	●		
OLAP	●				
Association & Correlation		●	●	●	
Classification & Clustering	●		●	●	
Pattern Discovery			●	●	
Anomaly Detection			●		
Content Analytics	●	●	●		
Text Analytics			●		
Video Analytics	●	●			
Trend Analytics	●			●	●
Business Analytics	●			●	●
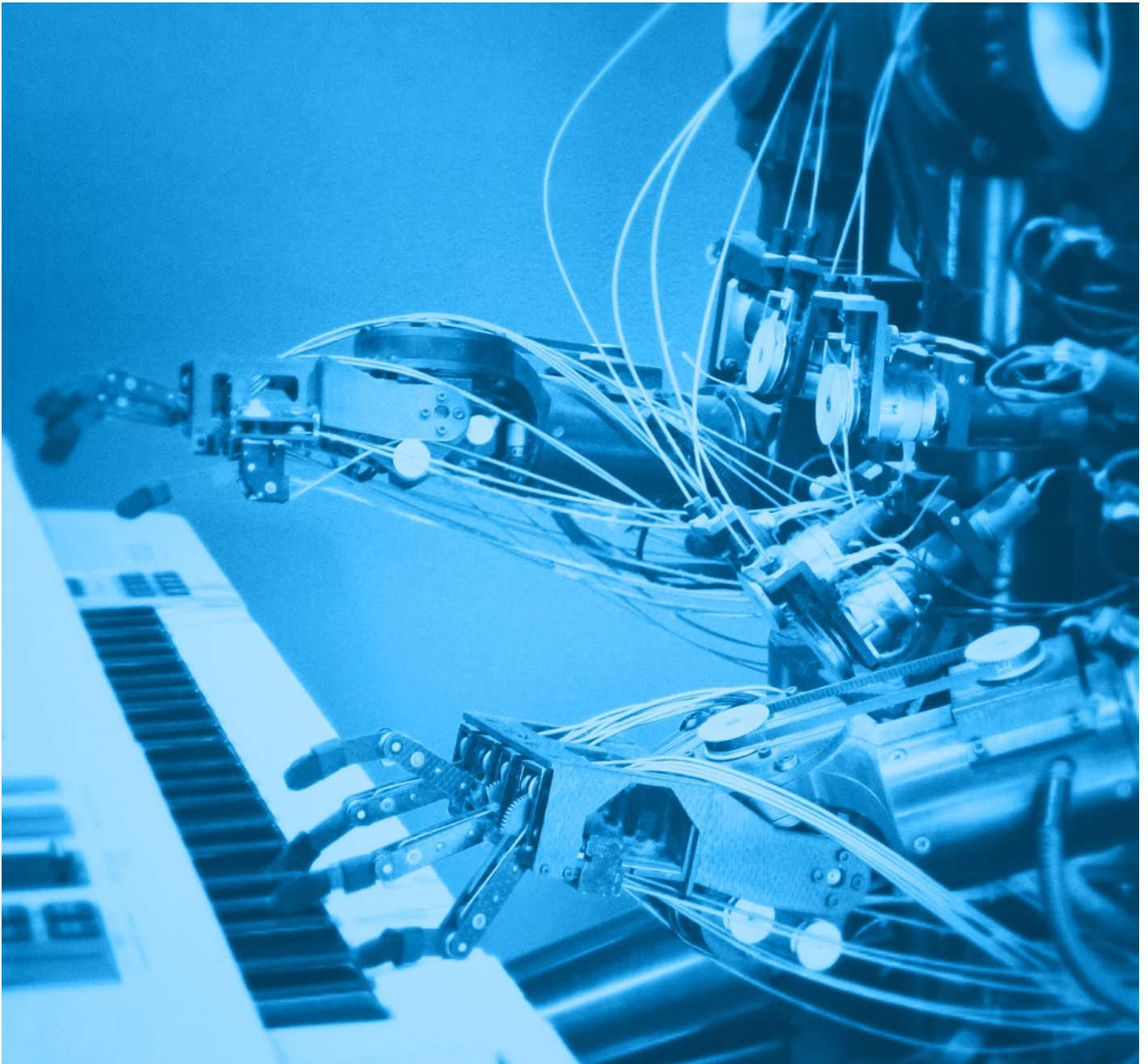
PATHS FOR INCLUDING AI AND IOT IN COMPANIES

Simplifying access and reporting IoT data is very valuable to companies. There are different phases a company can be on its path to transforming data into usable and valuable information to form new levels of customer engagement.

We have set up checkpoints that you can refer to for evaluating your position in data and analytics-driven businesses. Every company has its unique insights about how they want to build new customer relationships. However, there are some general topics common to every organization. Objectives often include engaging customers, customizing user experience, obtaining anal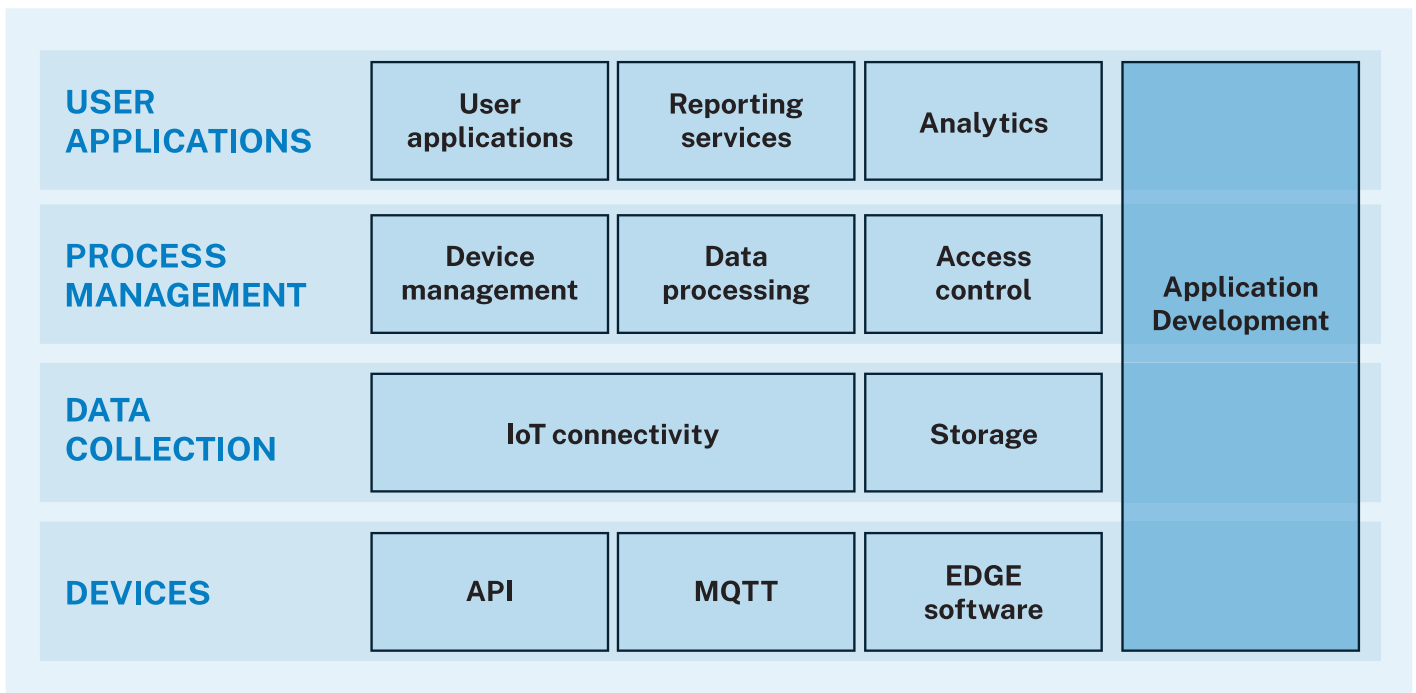ytics, or optimizing productivity with insights and predictions. Any place you have an option to put a device to measure, interact, or analyze something, you can also connect AI to it directly in the edge or later in the cloud.

A company can be in different phases of their path to transforming data into usable and valuable information.

HOW TO BUILD IOT?

› Set indicators and objectives for measuring process efficiency.

› Time spent on planning processes is time well spent. Do a quick proof-of-concept experiment to ensure the viability of assumptions.

› Identify not only the IoT devices but also other systems that need to be connected.

› Don't build IoT from scratch unless you have a really good reason for doing so. There are a large number of out-of-the-box components and good solutions to choose from.

When you are looking for solutions to provide you with the needed platforms and functionalities, one good way to map what you need is to make it a step-by-step process. Wapice often approaches this with readiness workshops where domain experts discuss the unique business goals and possible ways to activate them. Checkpoints are progressed from readiness workshops to a pilot project. The final step is a full production-ready IoT and AI-enabled solution.

USER APPLICATIONS	User applications	Reporting services	Analytics	Application Development
PROCESS MANAGEMENT	Device management	Data processing	Access control	
DATA COLLECTION	IoT connectivity		Storage	
DEVICES	API	MQTT	EDGE software	

HOW TO CHOOSE AN IOT PLATFORM?

A good platform should preferably provide a hazzle free approach to visualizing and interpreting your data and it should support a wide range of inputs from different ecosystems and integrations both vertically and horizontally.

› Check that supported transfer protocols are industry standards. MQTT is the most broadly used protocol and holds the de facto standard in IoT. Also, REST is a good option to have for additional flexibility.

› Avoid vendor lock and aim for a hardware-agnostic and cloud-agnostic platform

› Make sure the platform has ongoing support to avoid dealing with a non-working or unsupported product.

› You should give priority to open interfaces and multi-vendor platforms to ensure that the software architecture will last as long as the industrial machine, i.e. 10-20 years.

Prefer flexibility and hardware/cloud agnostic platforms

CAN MY BUSINESS BENEFIT FROM IOT AND AI?

IoT-platform and analytics are suited for your business if:

› You want to reduce costs, optimize operations and find new revenue streams.

› You want to get insights from real-time data and analytics to make smarter and faster decisions about your business.

› You want to achieve proactive automation and analytics to improve maintenance and supply chain operations.

The Wapice IoT-TICKET and AI solutions can help your company advance along digital path. Are you ready to start the journey? Start **HERE**!