NimCAR

Analytics Vision, Capabilities & Pilot

Final Group Project

Project Group 4 Team

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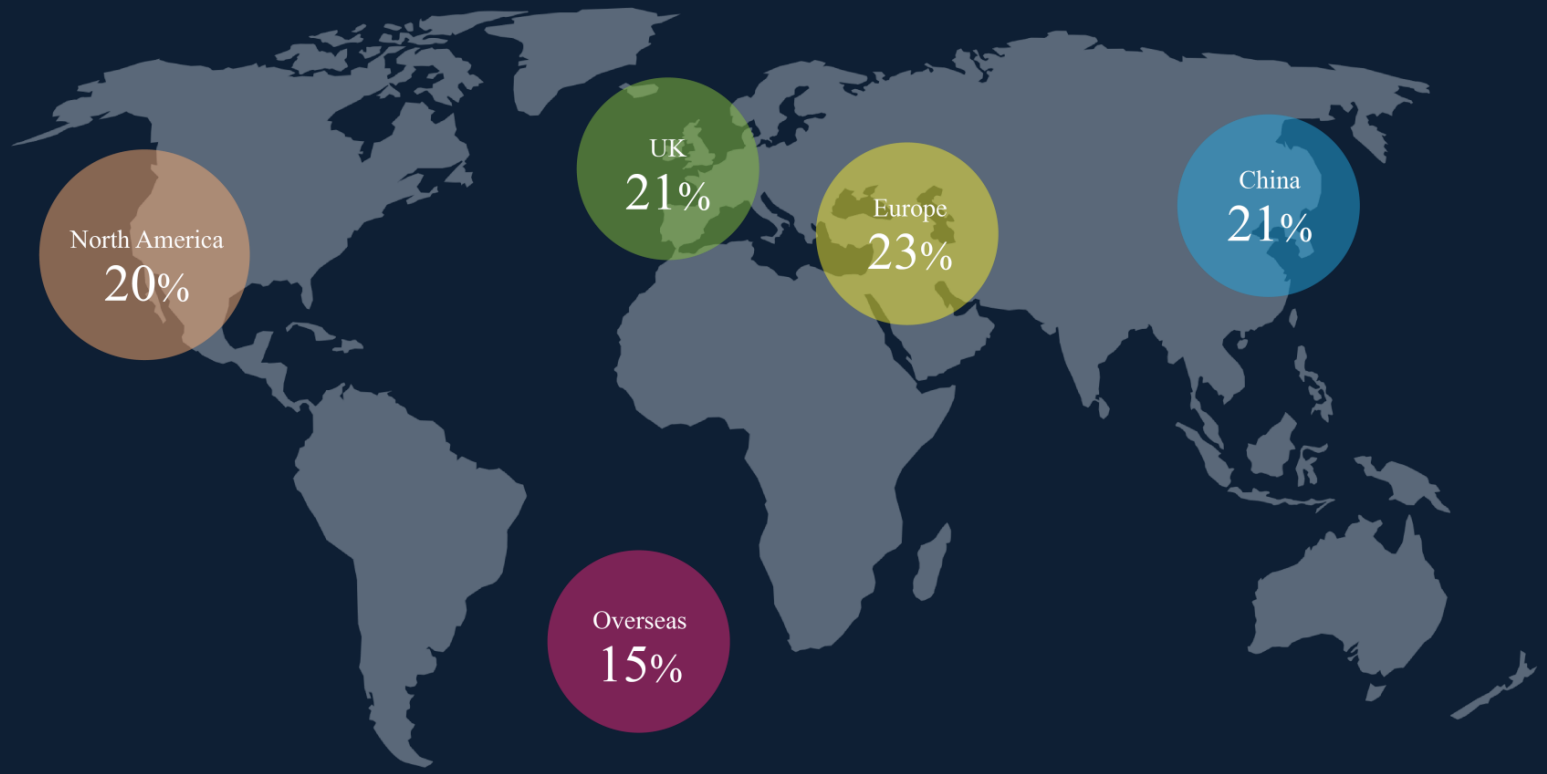
About NimCAR

- NimCAR is an automobile manufacturer that designs, engineers, produces, markets and distributes luxury vehicles
- They have two categories of models: sedan and SUV
- They have global sales of $91 Billion with 18% year-on-year growth.



Industry Context

NimCAR USP

- Popular luxury brand name
- Heavy R&D spend
- Cutting edge technology

COMPETITIVE LANDSCAPE

- Heavily competitive market
- Sedan model: many variants, established players
- SUV model: fragmented, less players

MARKET SHIFT

- Moving away from car ownership
- Autonomous connected technology
- Growth of smart cities
- Alternative powered vehicles
- Affordable energy and low carbon economy

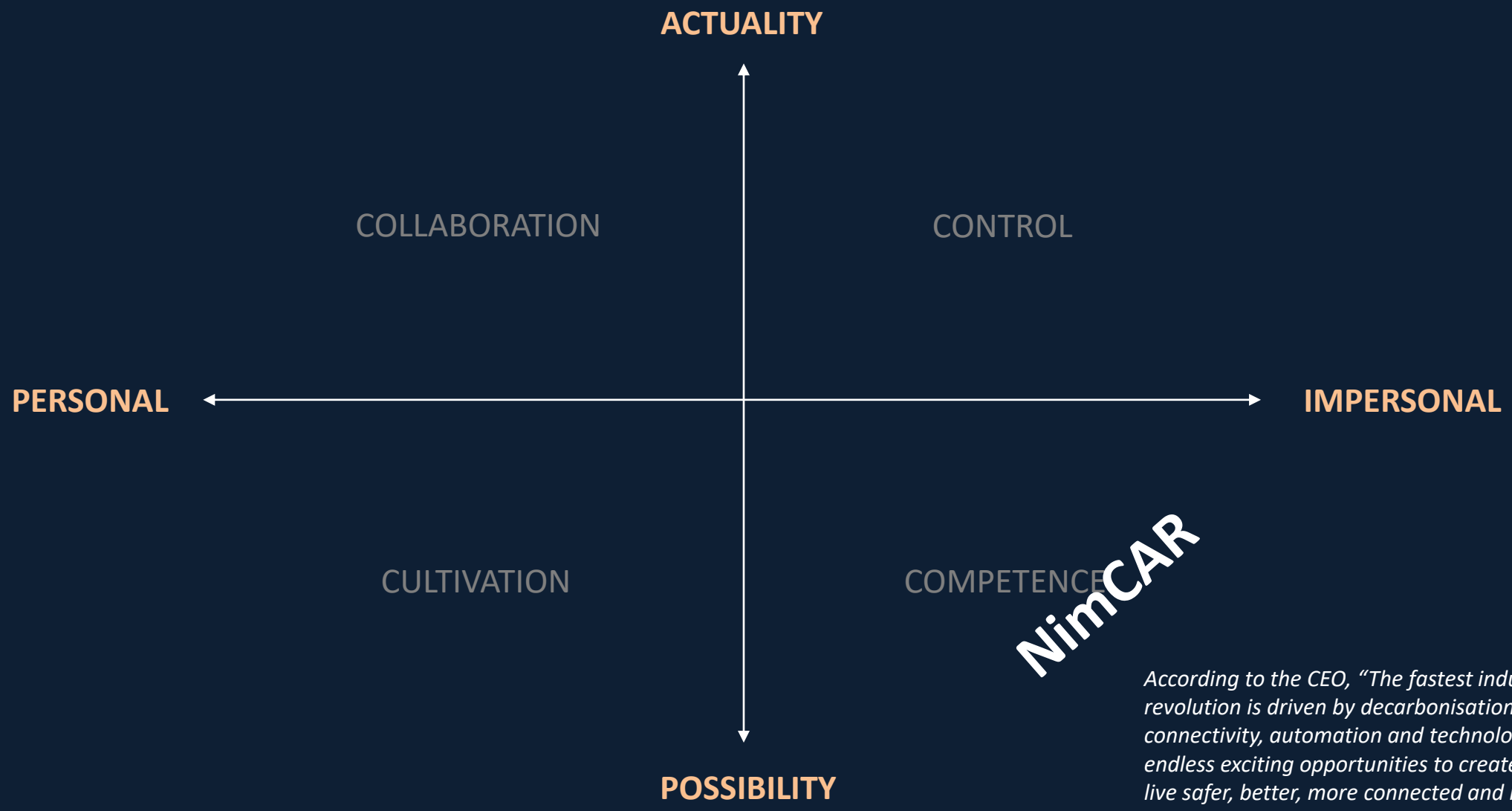
NimCAR CHALLENGE

- Despite good growth, NimCAR has lost $400 million due to car recalls, affecting the brand image and operating costs.

BUSINESS GOALS

1. NimCAR have a quest for operational excellence by minimizing product recalls and its impact.
2. Enhance aftersales service and fulfill the changing desires and needs of customers
3. Build world-class security features to create a world safer, better, more connected and mobile.

NimCAR's Culture



According to the CEO, "The fastest industrial revolution is driven by decarbonisation, digitisation, connectivity, automation and technology. There is endless exciting opportunities to create a world to live safer, better, more connected and mobile lives"

Current Analytics Capabilities

Level/Category	Basic	Moderate	Advanced
Sales analytics	×	×	✔
Marketing analytics	×	×	✔
Supply Chain analytics	×	✔	×
Pricing analytics	✔	×	×
IoT analytics	✔	×	×
Predictive Maintenance	✔	×	×
Cyber Analytics	×	×	×

Analytics Vision – Establishing Analytics CoE

FOCUSING

- Assessing feasibility and potential benefit of each initiatives
- Prioritizing initiatives according to business impact

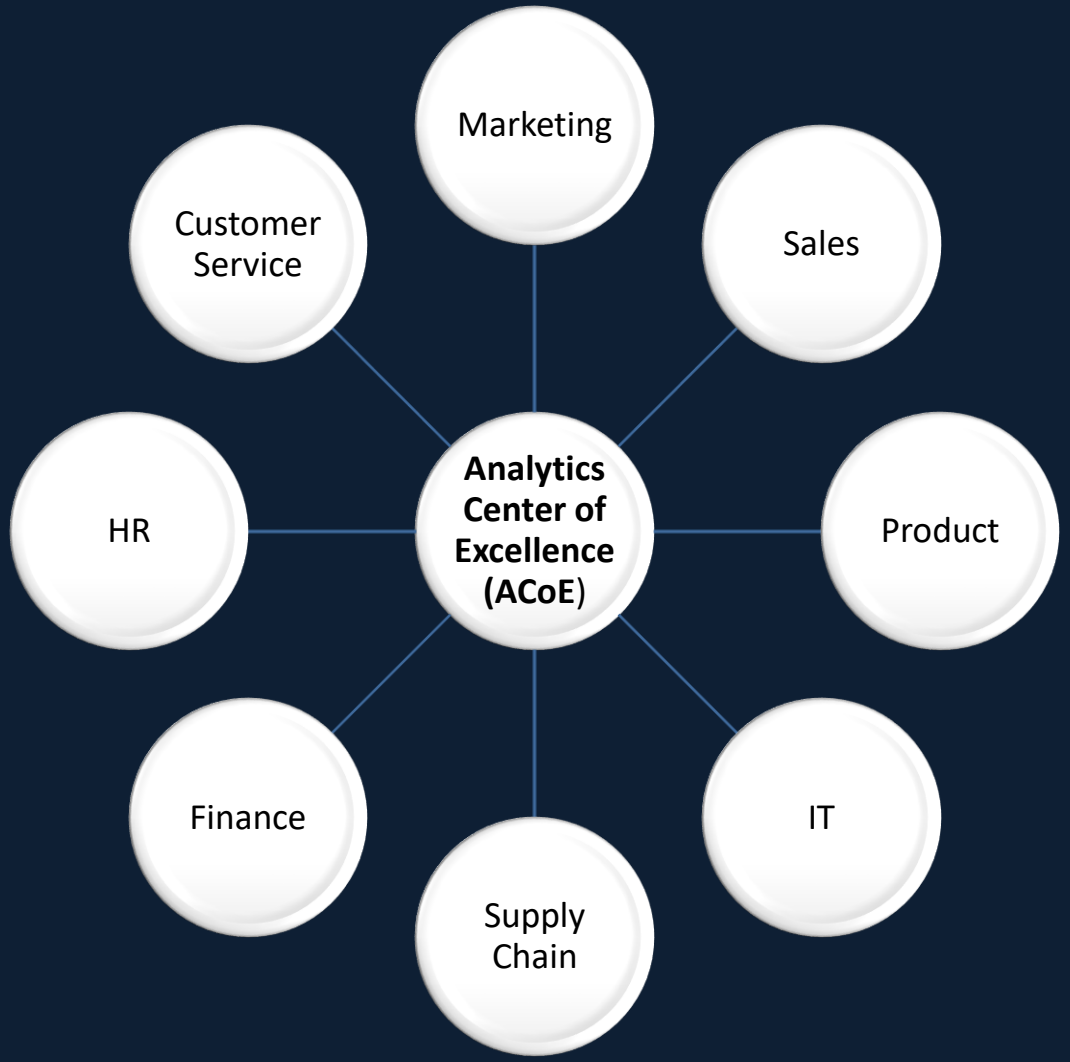
Short Term (> 6 months)	Mid Term (6 months - 2 yrs)	Long Term (2 - 5 yrs)
1. Understanding the gap in current capabilities with NimCAR's goals	1. Hire/Train resources in new & emerging skills	1. Industrializing successful use cases across the organization
2. Identifying skills sets and infrastructure needs	2. Defining standards, methodology and governance	2. Empowering teams/individuals to build complete solutions
3. Piloting few big data projects to understand the feasibility	3. Establishing operating rules with external partners	3. Embedding enterprise wide data-driven culture
	4. Fostering collaboration between analytics group and business units	4. Provide and enlarge the business value NimCAR seeks with data

ACCELERATION

- Developing initiatives with greater speed and agility
- Leveraging project lessons & insights across business units/ departments

Analytics Center of Excellence

Analytics CoE model – Hub & Spoke



- The hub consists of a core analytics group that has big data talent and skills.
- The spokes are the individual business units.

Projects under Analytics CoE

Marketing Analytics

Sales Analytics

Supply Chain Analytics

Pricing Analytics

IoT Analytics

Predictive maintenance

HR Analytics

CyberSecurity Analytics

Pilot Project

Deploying **Predictive Maintenance Analytics** to optimize the maintenance costs for their N-Xu model of SUV segment.

Why N-Xu model:

- Currently N-Xu model contributes around 16% sales for NimCAR and has potential to grow to 30-35% of their total sales in the next 3 years
- The competitors are trying to develop and introduce technologically advanced models of luxury SUVs.

According to a new market research report by Technavio , the global luxury SUV market is expected to grow at a CAGR of around 25% from 2017-2021

Pilot Project

Predictive Maintenance Analytics:

By leveraging data from warranty repairs and current vehicle sensor data, predictive data analytics can find vehicle maintenance issues that would be difficult for a human to discover.

-Sensors from IoT devices Vs data from warranty repairs
-Detecting anomaly in performance
-Optimizing car maintenance costs

Pilot Project

Business Impact:

- Improving bottom line by $ 30 million in FY 2019
- Enhancing customer satisfaction in Aftersales service of N-Xu customers using smart/IoT devices

Pilot Project Significance:

- Easy to scale to other variants in SUV and Sedan segments with minimal changes in the analytical model
- Highly flexible in knowledge transferring, leveraging insights and resource sharing

Risks Involved

01 **Hardware & Software integration** – IoT devices and software technologies/applications have to work in tandem to get the desired output.

02 **Handling data flow** – The IoT sensors may produce data in TBs every day and the systems must be capable enough to handle storage and data flow

03 **Privacy concern & customer acceptance** – Customer might have privacy issues in terms of real-time tracking of their cars and car parts.

04 **Data Security** – Data theft and protection frameworks and policies need to be enacted to avoid any cyber attack

Benefits

01 **Cost & Time to scale** – The project insights and capabilities can be scaled to other models/variants with greater speed and less cost.

02 **Operational efficiency** – This pilot can be the starting point for NimCAR to realize their quest for operational efficiency

03 **Growth opportunities** – The insights will open up new opportunities for growth in the highly competitive SUV segment

04 **Competitive advantage** – Deploying Smart solutions to enhance customer satisfaction can turn out to be a competitive advantage to increase profit margin and sales.

Stakeholder Heatmap

STAKEHOLDER	ATTITUDE TOWARDS PROJECT	PERFORMANCE METRICS	CONCERNS
Finance	**Partner**	• Sales and profitability • Accuracy of Forecast	• Will have to re-engineer forecasting
Customer Service	**Resource**	• Customer satisfaction • NPS and CES	• Retrain with new skills and knowledge
Production	**Roadblock**	• Just-in-time • Capacity utilization	• Unclear on the outcome of the project
Quality Assurance	**Resource**	• Active defects • Defects fixed per day	• Will have to modify the quality standards
Software	**Roadblock**	• System accuracy • Uptime	• Difficult integration with potential interruptions
Aftersales Service	**Partner**	• Sales volume • Profitability	• Implementation not fast enough

Stakeholder Buy-in Strategies

STAKEHOLDER	BUY-IN STRATEGIES
Finance	• Reduction in operating cost by reducing warranty repairs • Improvement in parts/components sales
Customer Service	• Increase in NPS and CES score cards • Customers will be highly receptive to calls
Production	• Final product will have advanced technologies • Decrease in production time and increase in quantity per day
Quality Assurance	• Will have modern standards • Reduction in product defects
Software	• Help with frameworks and tools to speed up the process
Aftersales Service	• Provide timeline and project phase details for increasing sales

Success Metrics

1. Project spend Vs ROI – Cost saved/revenue generated
2. End User Adoption – Simplicity and flexibility in adopting IoT sensors, tools and platforms
3. Agility – Standardize and scale the process to gain faster insights
4. Time-to-market – Accelerates the delivery of value
5. Responsiveness to change – According to micro and macro economics situations

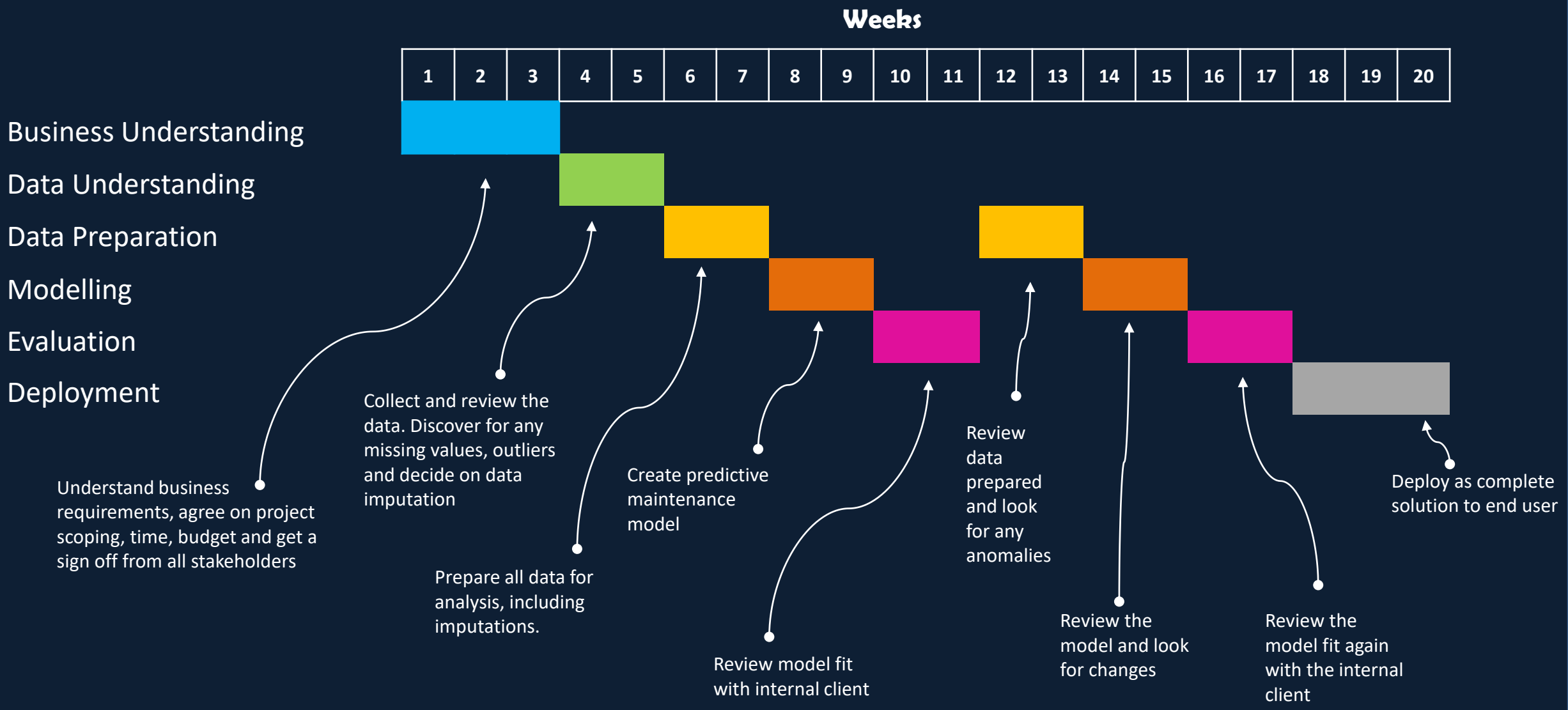
Project plan

Hybrid Approach

combination of Agile & Waterfall method

- Data architectures, data governance, process, workflows, IoT integration, security and privacy will be defined well in advance
- But there will be flexibility in the areas of prototyping, prioritizing to market requirements and building by layers
- There will be active business units involvement, as the project will go through many iterations before delivering a complete solution

Project Plan – Hybrid Approach



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