

Agenda

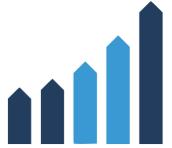
1. Business case development

- Problem statement
- Objectives for analytics investment.
- Potential benefits, risks & strategic Importance
- Business case review



2. Analytics Maturity Reflection

- Reflection of Analytics Maturity
- Challenges associated with Analytics Maturity
- Evaluation of a company's Analytics Maturity.



3. Analytics Lifecycle and Canvas Model Integration



- Explanations of the two models
- Example application of the Analytics Canvas Model
- Evaluation of the model with suggestions and improvements for business analytics projects

Strategic Application of Analytics in Agriculture



Business Case: Data driven water irrigational system for an agriculture business

Problem Statement

- Traditional irrigation systems operate like on/off switches.
- Their usage leads to soil erosion and directly impacts the biodiversity of surrounding rivers and lakes.
- Watering costs, including water consumption and fertilizer, drive around 60% of an agricultural business for crops related to food production.
- Unequal water distribution results in some areas experiencing water scarcity while others suffer from overwatering.
- Water is becoming more and more valuable resource.
- Optimized water consumption will not remain a choice but will be prerequisite for future agriculture.



Business Case: Data driven water irrigational system for an agriculture business

Objectives for analytics investments

- Data collection through the Internet of Things (IoT) on water usage, soil quality, and soil humidity to optimize water usage.
- Collection of third-party meteorological data to forecast future watering requirements and contribute to intelligent, data-driven decision making to predict when watering is needed.
- Optimize, report and monitor yield together with watering analytics.



Business Case: Data driven water irrigational system for agriculture

Potential Benefits

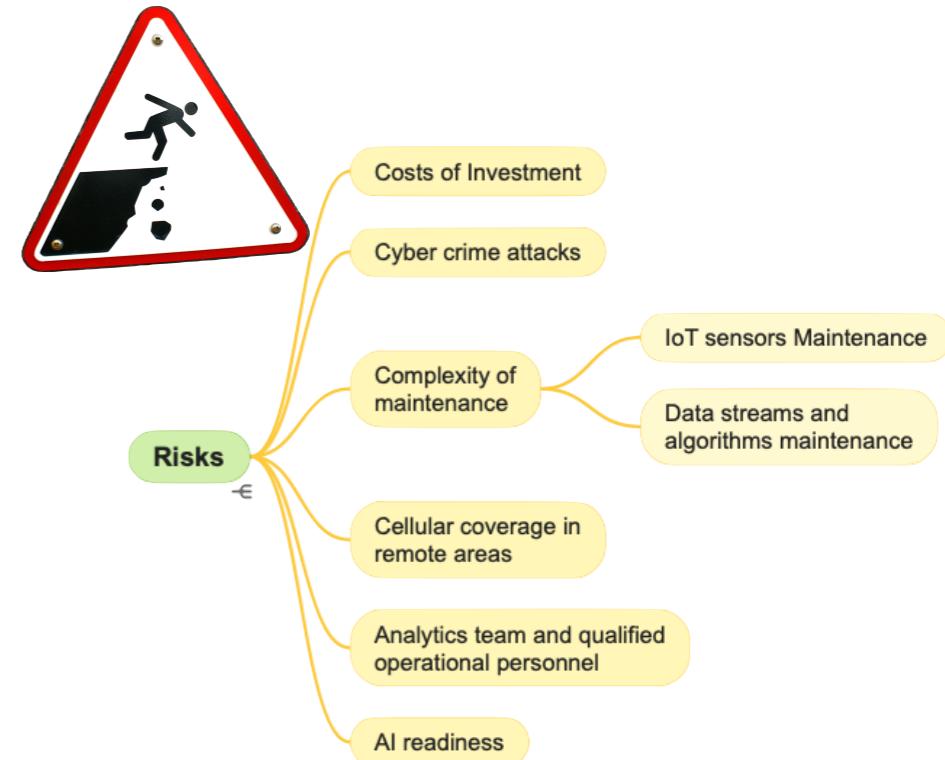
- Improve seed and plants health by avoiding over and under irrigations.
- Compliance with green farming and sustainable agriculture practices.
- Responsiveness to sudden changes in weather conditions.
- Detection of water leakage, alert through push notification notification system.
- Reduction in the need for human interaction, leading to savings on headcount.
- Save on electricity costs.



Business Case: Data driven water irrigational system for agriculture

Potential Risks

- Initial cost of investment
- Vulnerability to cyber crime
- Complexity of maintaining data systems and algorithms' accuracy.
- Maintenance of IoT sensors to ensure their functionality.
- Potential network outages might cause distraction in irrigation.
- Transaction cost related to lack of analytics personnel - hiring evaluating and training new personnel.
- Whether the organization is ready to implement AI solutions.



Business Case: Data driven water irrigation system for agriculture

Strategic Importance

- Decision making with analytics enables efficient water resource management.
- Crop yields and quality of crops can be improved through continuous soil health management.
- Alleviating environmental harm by reducing water waste.
- Long term competitiveness and competitive edge with Artificial Intelligence and Machine Learning systems.



Business Case: Data driven water irrigation system for agriculture

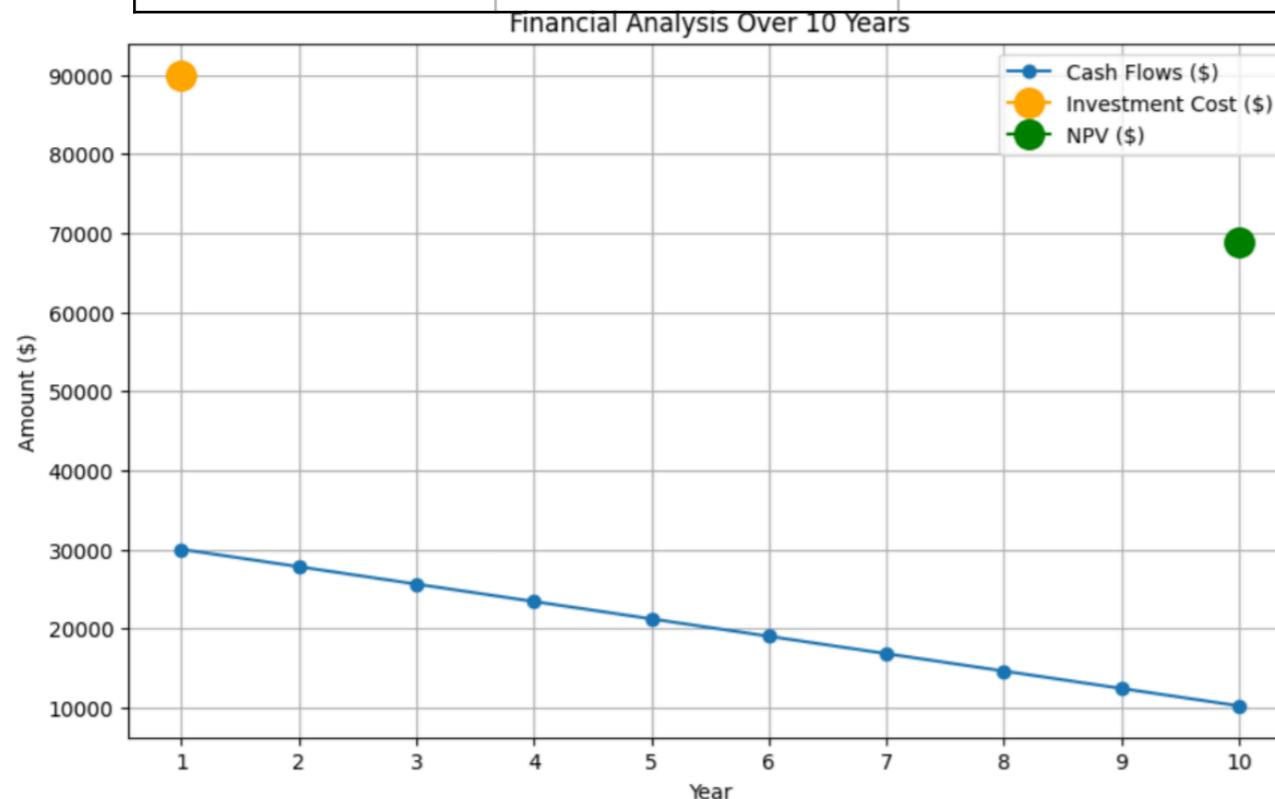
Business Case

- The project will involve procurement and installation of IoT sensors, as well as the development of software and data management tools to implement data-driven water irrigation systems.
- The time of procurement, along with IoT activation and placement, would take 8 months for 200-300 acres.
- The project's key advantage is that it would target areas in sustainable business development goals specifically related to climate action and life on land.



Business case review, decision model

Investment Type	Drivers	Approach	Probable Owner	Example Initiatives
Process improvement	Opportunity to improve operational efficiency	Business Case	Field Manager - IT infrastructure	Procurement and integration of IT sensors along with analytics tools such as PowerBI or similar.



Description	Amount
Investment Cost of IoT sensors and software	\$90,000
Maintenance of IoT sensors and data analytics / year	\$350,000
Savings on operation personnel Headcount / year	\$400,000
Electricity / year	\$20,000
Water / year	\$50,000
Depreciation / year	\$2,200
Total	\$72,200
Lifespan years	10
Discount rate	5.50%
NPV	\$68,796



Analytics Maturity Reflection

What is analytics maturity?

- Analytics maturity means that an organization is able to excel and utilize data analytics in all areas of the entity, including strategic decision making.

- Analytics maturity can be measured with a five-stage framework that is used to assess a company's analytical level.

Starting with the most basic level where analytics is not utilized, followed by stage two, where some sort of reporting is used.

In stage three, an organization begins to see value in analytics, and it may already be in use, for instance, with predictive modeling.

In stage four, it is clearly defined that the business goal is to use analytics across the organization, applying ML models and AI.

Ultimately, on stage five the company uses sophisticated analytical techniques throughout the organization.

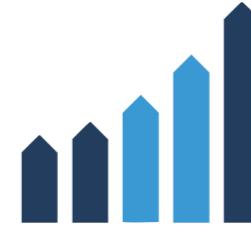
- Reaching analytics maturity means that the organization utilizes data analytics at the enterprise level and is able to leverage data to adhere to best practices.



Analytics Maturity Reflection

Why analytics maturity is important ?

- Achieving higher level of maturity in analytics requires heavy investments in cutting-edge technology, analytics mindset across leadership and ultimately top analytics personnel.
- The combined framework of the 5-stage maturity and the Delta Plus model provides guidelines for actions needed based on the maturity score, which helps organizations to make appropriate decisions to reach analytics maturity.
- For an organization acquiring higher levels of analytics maturity straightens its competitive edge, long-term survival, and might create new revenue streams as well.
- Analytics maturity is linked to financial performance, hence it is essential for a company to use advanced data analytics.



△ DELTA PLUS MODEL

D	DATA	BREADTH, INTEGRATION, QUALITY
E	ENTERPRISE	APPROACH TO MANAGING ANALYTICS
L	LEADERSHIP	PASSION AND COMMITMENT
T	TARGETS	FIRST DEEP THEN BROAD
A	ANALYSTS	PROFESSIONALS AND AMATEURS
Adapted from <i>Analytics at Work</i> , Davenport, Morrison and Harris, 2010		
T	TECHNOLOGY	APPROACH, ORIENTATION, VELOCITY
A	ANALYTICS TECHNIQUES	SOPHISTICATION, DIVERSITY

Adapted from *Competing on Analytics*, Davenport and Harris, 2017

Analytics Maturity Reflection

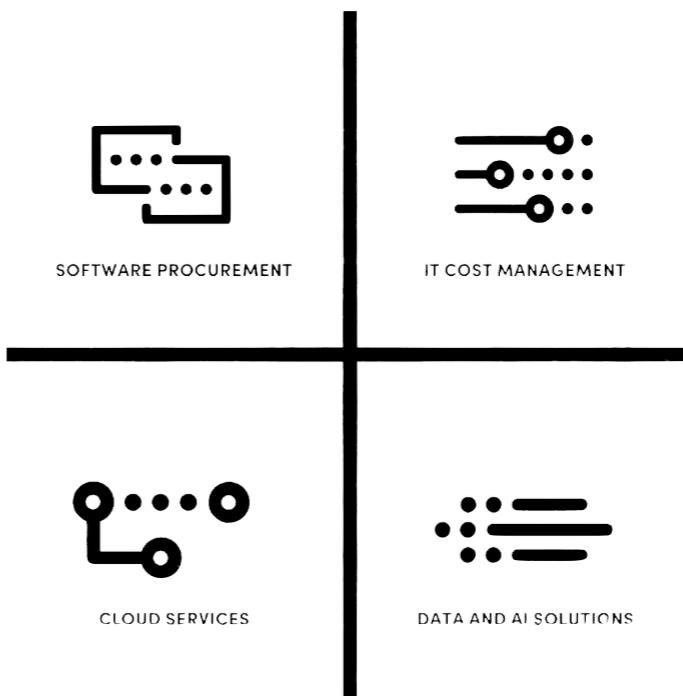
Challenges associated with becoming a mature analytics company

- The transition from lower levels, where an organization touches the basics of analytics such as reporting, to the level where an organization is actually proficient at analytics is typically considered to be extensive in nature.
- Technological complexity, scalability, know-how to allocate investments accordingly are factors that add challenges.
- Lack of expertise and motivation from senior leadership and key stakeholder can hinder an entity to reaching analytics maturity.
- Continuously keeping up with emerging technology such as AI and new LLM models can be exhausting to a small / medium sized firm.
- Building an analytics mindset for an organization that typically operates in a non-data-driven industry can pose risks and challenges.



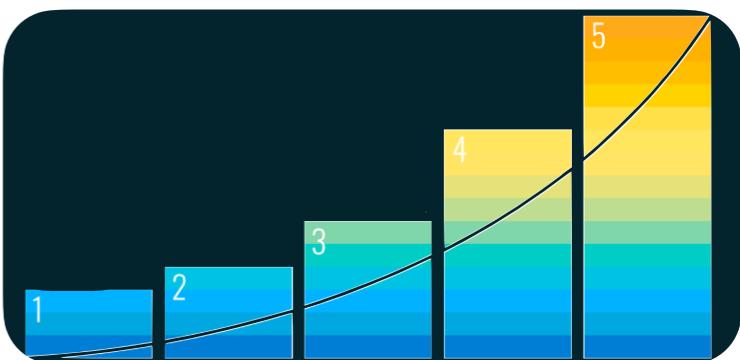
Evaluation of a company related to analytics maturity

- Crayon ASA is an IT and software asset management company providing B2B digital cloud transformation and advisory services.
- Crayon's DNA is centered around four areas including software procurement, IT cost management, Cloud Services, and Data & AI Solutions.



Evaluation of a company related to analytics maturity

- Crayon has expertise to cost-optimize hybrid and multi cloud environments to its customers, and enable data driven decision making.
- Crayon advises clients to increase their revenue stream, cut costs, and increase operational efficiency through advanced predictive methods, AI, ML, automation, and optimization. This unlocks new potentials for many organizations.
- Crayon utilizes business intelligence across the business, from customer relationship management, decision-making, setting targets, and deploying analytics.
- Crayon would be considered one of the companies that are mature in analytics, at upper stage four, and is guiding others through the transition.



Analytics Lifecycle and Canvas Model Integration

What is analytics Lifecycle?

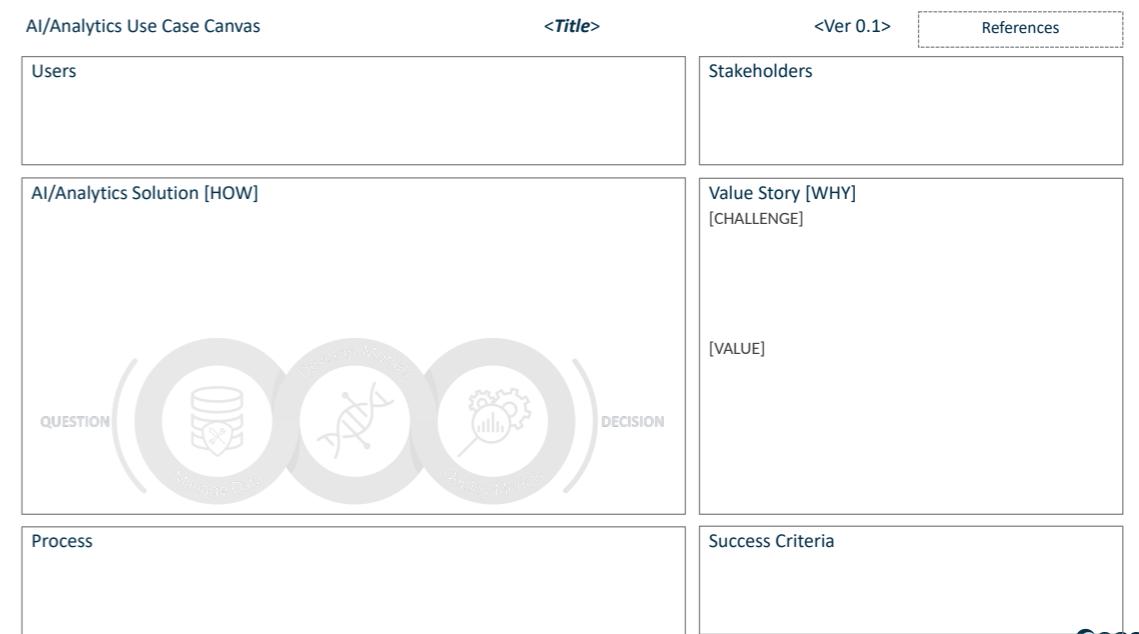
- Analytics Lifecycle is about data processes for analytics, transforming raw data to enterprise value.
- To create a business value everything starts with a question. For instance Why our customers churn?
- Analytics lifecycle helps to capture all the required steps needed to deliver value from analytics.
- Data accessibility, collection, governance, and preprocessing are vital steps to develop models and put them into production. Without good data quality, models won't be able to produce good results, especially if training data includes bias.
- Deploying insights and retraining the models unleashes business value for decision-makers, for example allowing the launch of new marketing campaigns targeted at specific customers and assisting stakeholders to make the right decisions.



Analytics Lifecycle and Canvas Model Integration

What is analytics canvas model?

- Analytics Canvas captures all the necessary steps for an analytics projects and breaks it down into principles.
- Clearly determining the users and the stakeholders of a project brings different verticals and people from the organization to the same table.
- By defining a possible analytics solution and required steps, it engages the stakeholders and enables them to see through complex tasks.
- Oftentimes, it is overlooked whether a problem is worth addressing and what its success criteria are.
- Applying this framework helps us identify the particular problem we are trying to solve.
- On high level, addresses the financial and operational KPIs involved in an analytics project or business case.



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Analytics Lifecycle and Canvas Model Integration

What are the associations between the two models?

- Fusion of the analytics lifecycle and analytics canvas model gives the possibility to capture the entire data analytics project on one canvas.
- It includes the necessary steps to complete, the solution for the projects aligned with the success criteria, and simultaneously captures the financial value, and any challenges.
- Properly defining users and stakeholders increases the likelihood of putting the model into production and decreases the chance that models are left abandoned, which is a major reason why the integration of the two models outperforms the analytics lifecycle model.



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Example Application of Analytics Canvas Model

Tandem riding detection for an e-scooter rental company

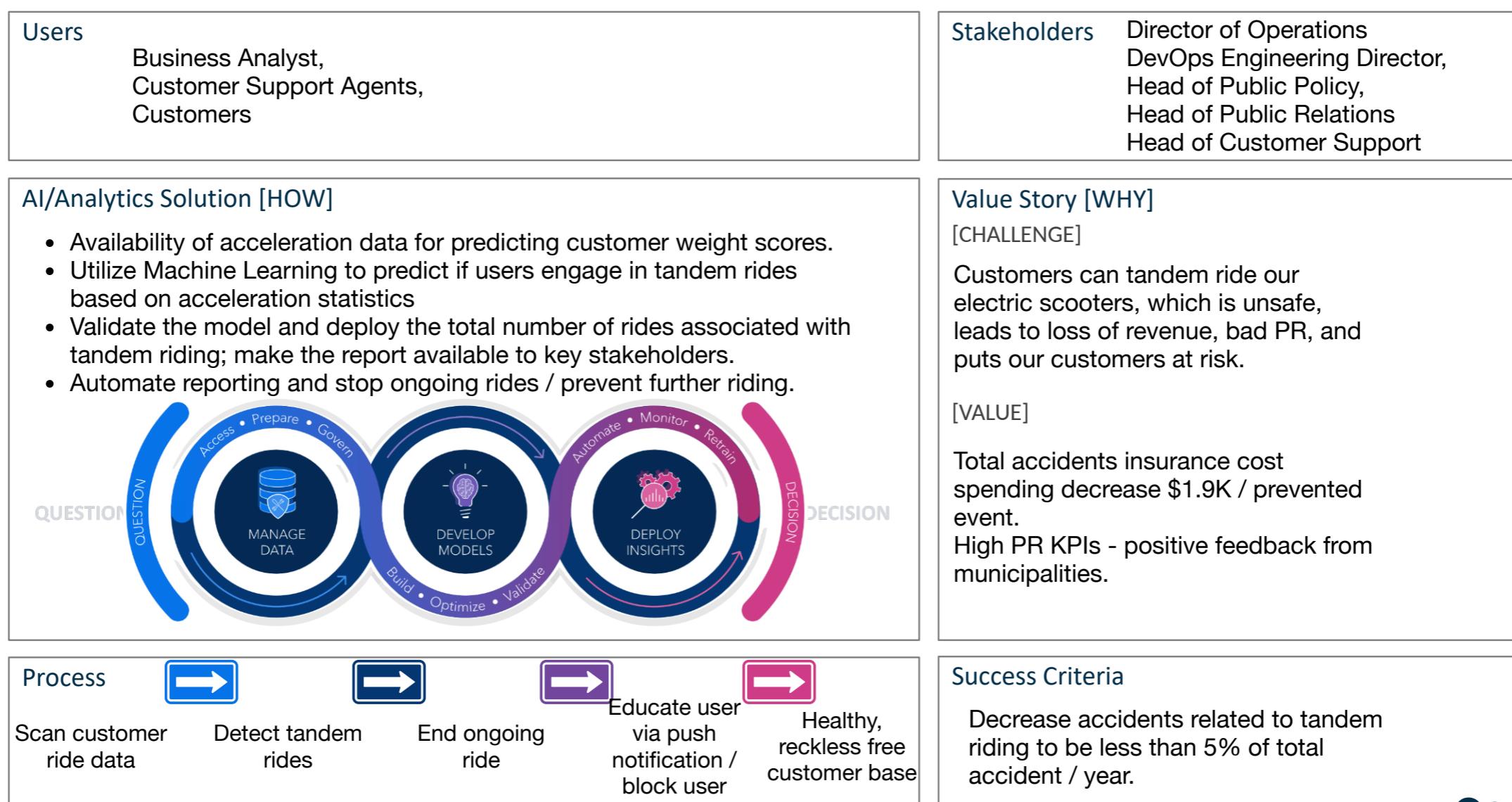
- Tandem riding is one of the major causes of accidents for e-scooters.
- It also puts the company at serious risk in terms of PR relations, as the municipality is considering revoking the license required for operations.
- Tandem rides also pose increase in insurance costs.



Example Application of Analytics Canvas Model

Tandem riding detection for an e-scooter rental company

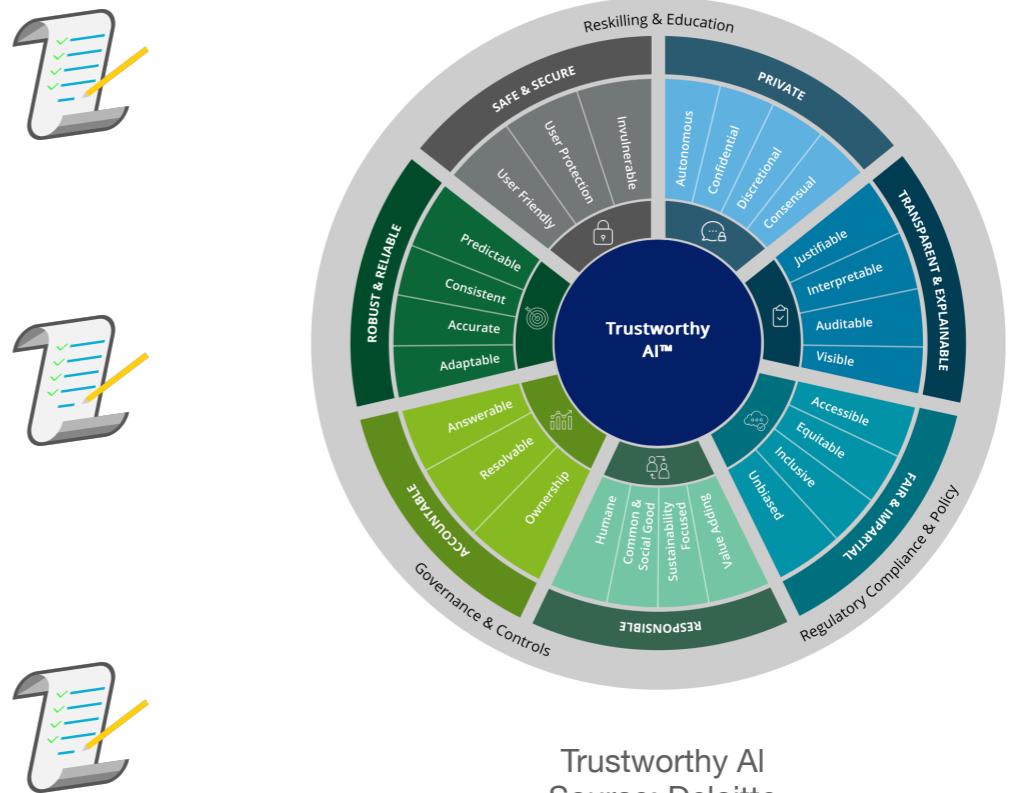
AI/Analytics Use Case Canvas



Analytics Lifecycle and Canvas Model Integration

Suggestions and Evaluation of the Model

- Suggesting the inclusion of risks associated with analytics project in the analytics canvas model would help decision makers clarify the importance of a project.
- Capturing risks also important as some of them are linked to emerging AI. The unethical use of AI poses a risk, and certain project may need to be halted despite their potential business value.
- Suggesting the use of the Analytics Canvas model in parallel with Trustworthy AI model from Deloitte. This would ensure that the scope of an analytics project fits into the organization's current practices and is aligned with technological, ethical, and strategical requirements.



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