AI for Agile Organizations

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Leveraging AI to build Agile Organizations

Overview
1
Understanding Agility with an analogy

Awareness and Reflexes
2
Digging into the details of situational awareness and organizational reflexes

Agility Framework
3
A Prognosis for Adopting Agility by leveraging AI

In Conclusion
4
In Conclusion how AI is leveraged on various fronts

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An Agile Organization

An **Agile Organization** is one that is quick in responding to changes in the marketplace or environment. A highly **agile organization** reacts successfully to the emergence of new competitors, rapid advancements in technology and sudden shifts in overall market conditions – **Source : McKinsey**

The **goal** is to enable the organization to generate instant, frictionless, intimate, incremental, risk-free value at scale, and the financial rewards that flow from that capability – **Source : Forbes**

"**Agile**" refers to an iterative, incremental method of managing design and building activities with an aim of carrying out new deliverables in a highly flexible and interactive manner. It requires capable individuals across different disciplines, openness to constant (customer) input and a non-hierarchical management form with a mindset that allows for failure – **Source : Cap-Gemini**

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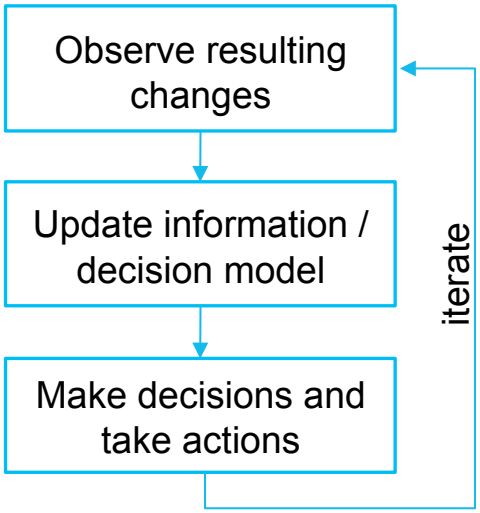
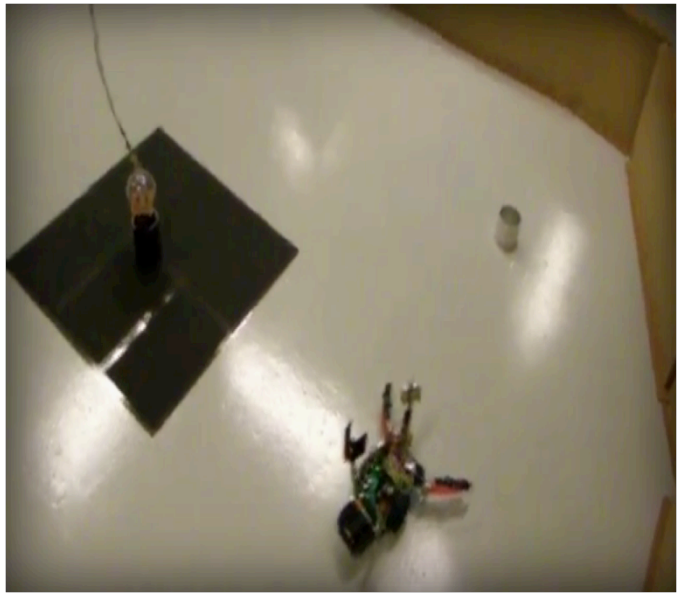
An Analogy

Simultaneous Localization and Mapping

The SLAM Process





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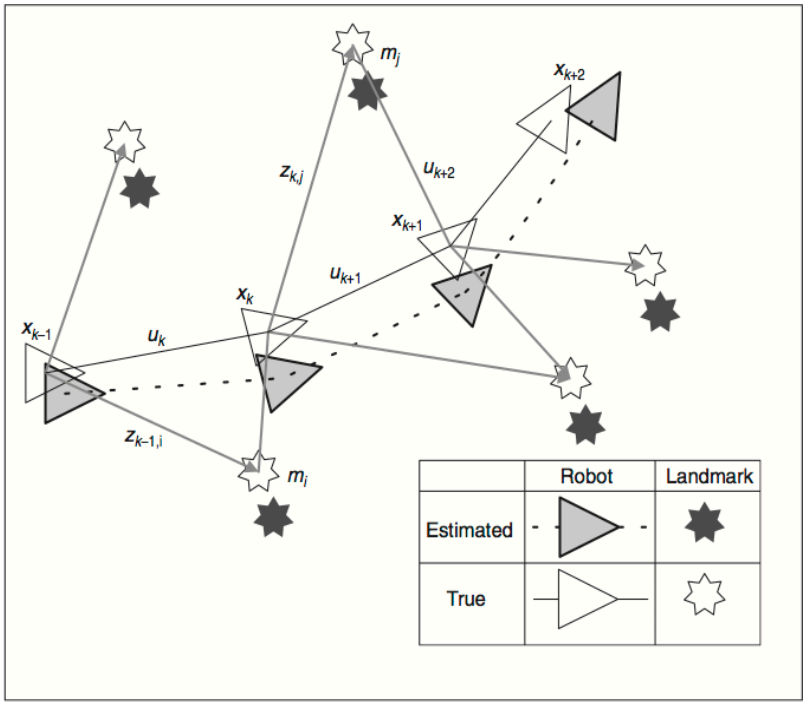
SLAM: An Analogy

Simultaneous Localization and Mapping in robotics.

- One needs to know the lay of the land to know where your robot stands
- One needs to know where robot stands in order to correctly map the environment
- The mapping between observations and landmarks is unknown & picking wrong associations can have catastrophic consequences.



SLAM : A Chicken and Egg Problem

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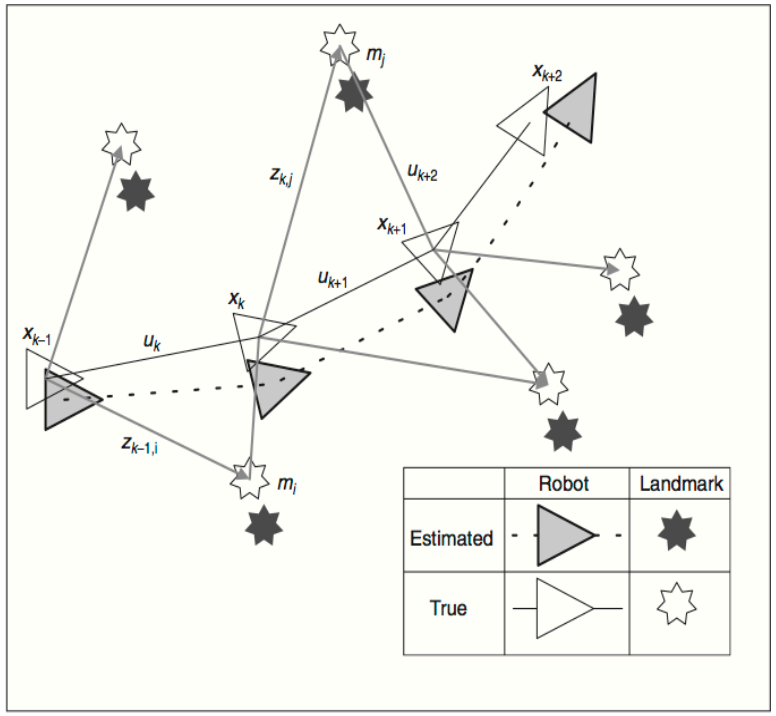
SLAM: An Analogy

- In studying the approaches to solving this problem lie the answers to organizational agility
- Maintain information about the environment and the states of the robot / organization.
- Robot repeatedly senses and moves in order to attain an estimation of both environment and position .
  - Standing still is no option!
  - Increasing the # of observations per unit of distance improves accuracy
  - Increasing the # of iterations per unit time improves speed.
- Rapid rate of small changes improves agility and robustness.



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How does this relate to Organizational Agility

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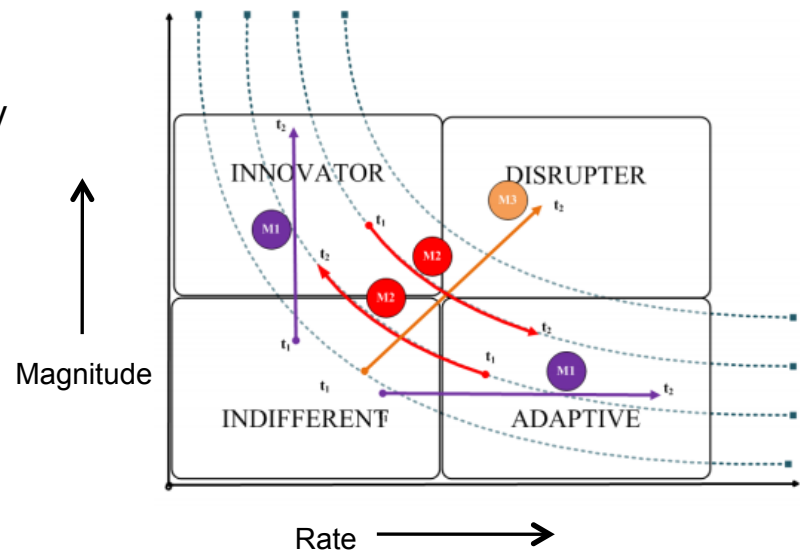
Organizational Agility

- An organization's agility can be defined as a two dimensional concept involving:
  - Magnitude of variety (i.e., change)
  - Rate of variety generation (i.e., speed)

  In a firm's product and services

  – Jagdip Singh,
  Case Western Reserve University

- Example
  - Smartphone Market
    - Apple, Samsung, Huawei etc.



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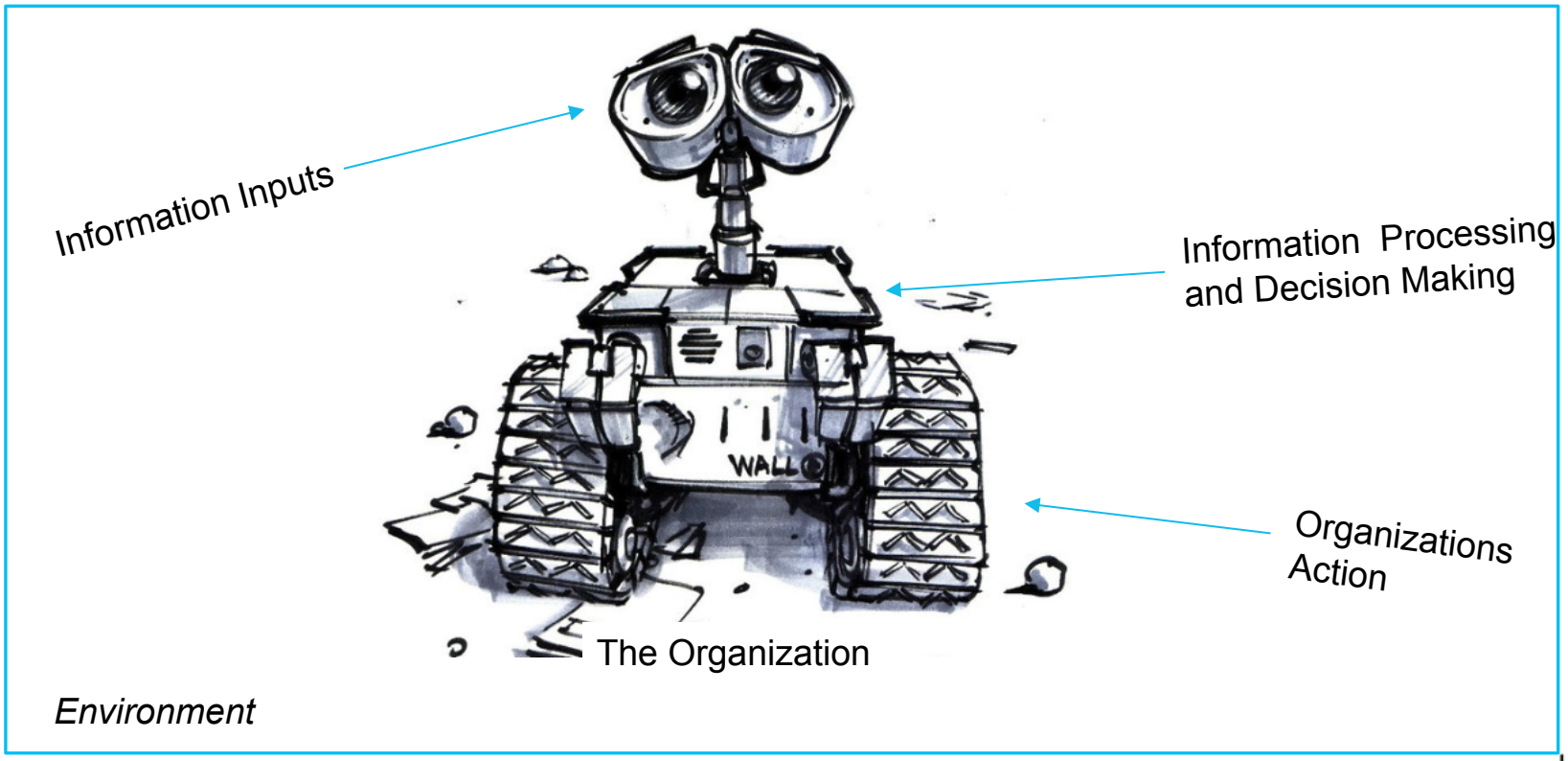
Robot as an Organization



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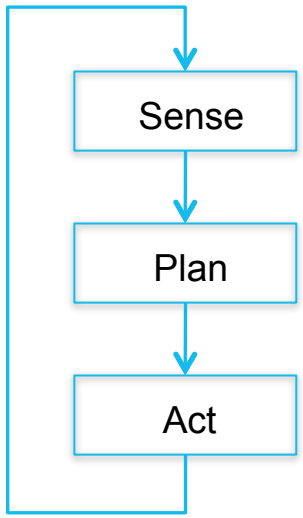
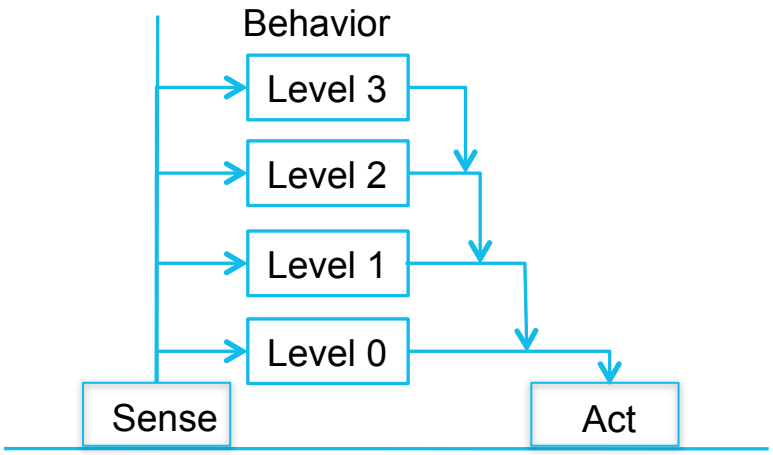
Robot Architecture

Hierarchical Architecture



Subsumption Architecture



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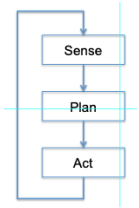
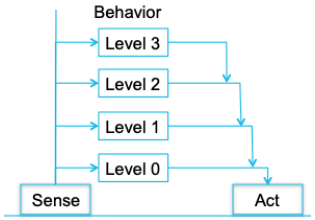
Robot Architecture

Hierarchical



- Common architecture before 1985
- Each step required full planning to goal state
- However, actions had to be limited because of uncertain and dynamic environment.
- Too rigid / slow to react
  - E.g. Shakey the robot – Stanford

Subsumption



- Dominant architecture today
- Each level implements limited behavior
  - Walking, Obstacle avoidance
- Higher levels control / direct lower level behavior
- Each level can work in absence of higher level
- Reactive and responsive
  - Makes occasional mistakes

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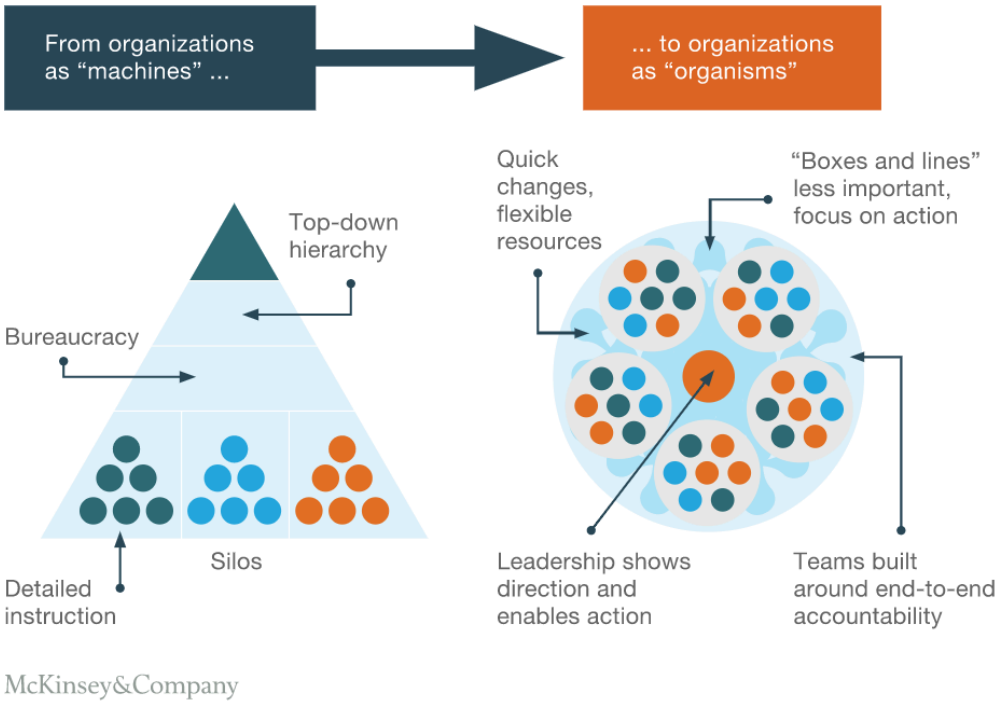
Structuring Organization for Agility



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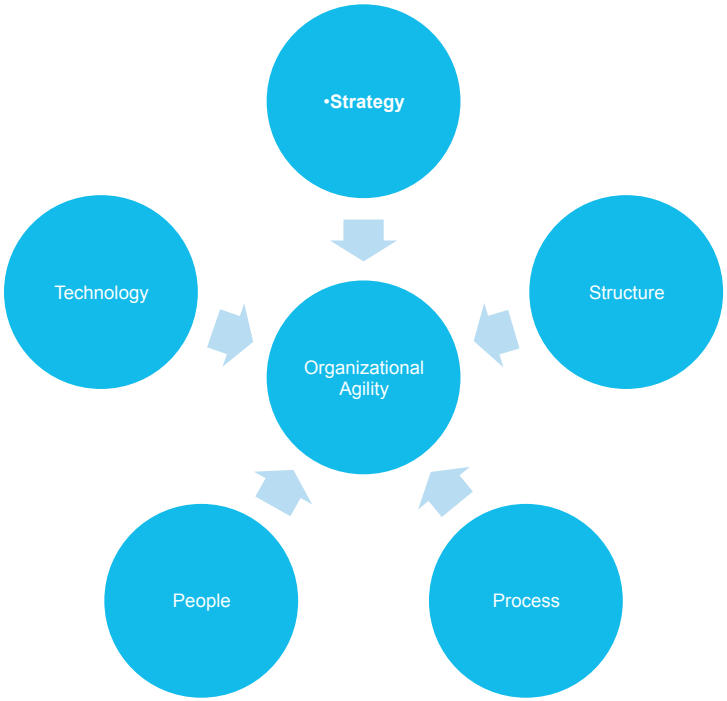
Agile Transformation

- Agile transformation touches every aspect of an organization.
- It is a complex and drawn-out process
- In remaining parts of the presentation we will explore how AI can help in this transformation.



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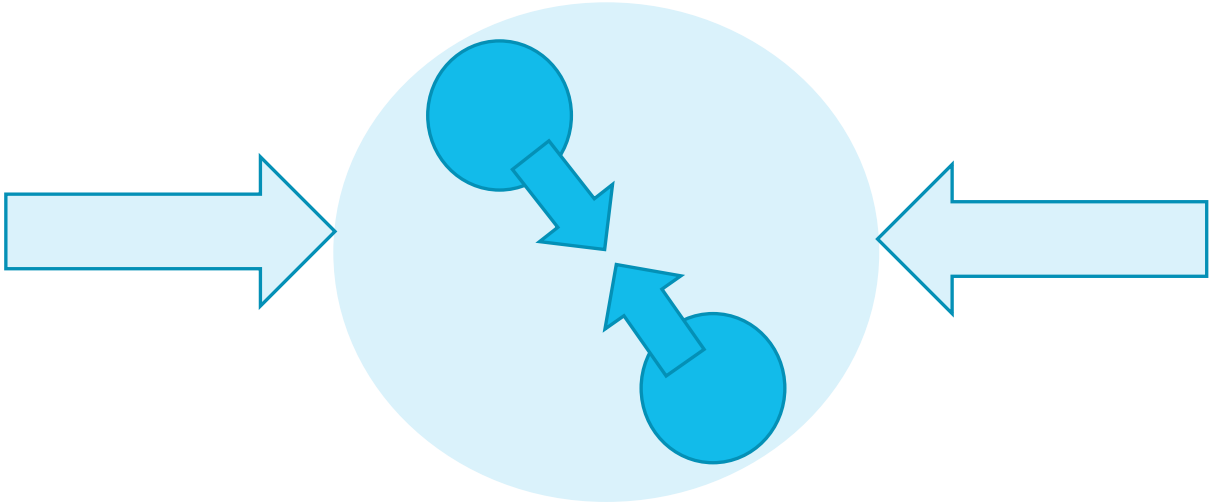
Situational Awareness improves Strategy

Leverage AI to process internal information to generate prior beliefs



Identify AI to process external information to upgrade prior beliefs

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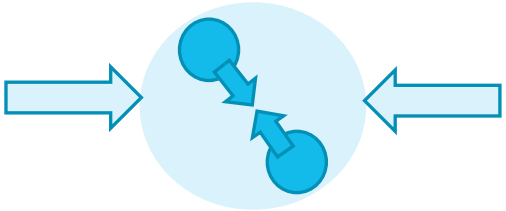
Situational Awareness improves Strategy



- Instrument and collect as much internal and external information as possible
- Use AI / ML techniques to analyze the data to increase awareness and accelerate decision making.

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AI based Agility Framework for Organizations

Identify points of information transition

- Support team addresses customer tickets.
- Sales team sources rolodex to increase customer base.
- Engineering works with sales for bidding

Build 'AI Sensors' at these transition points to capture data.

- Capture time taken to convert .
- Propensity modelling for rolodex list based on conversation.

Develop 'AI Sensors' to now reduce execution time/ improve efficiency

- If they exist 'AI-Sensors' should be enabled to educate the users in the process.
- These use cases are called 'Ubiquitous AI'.

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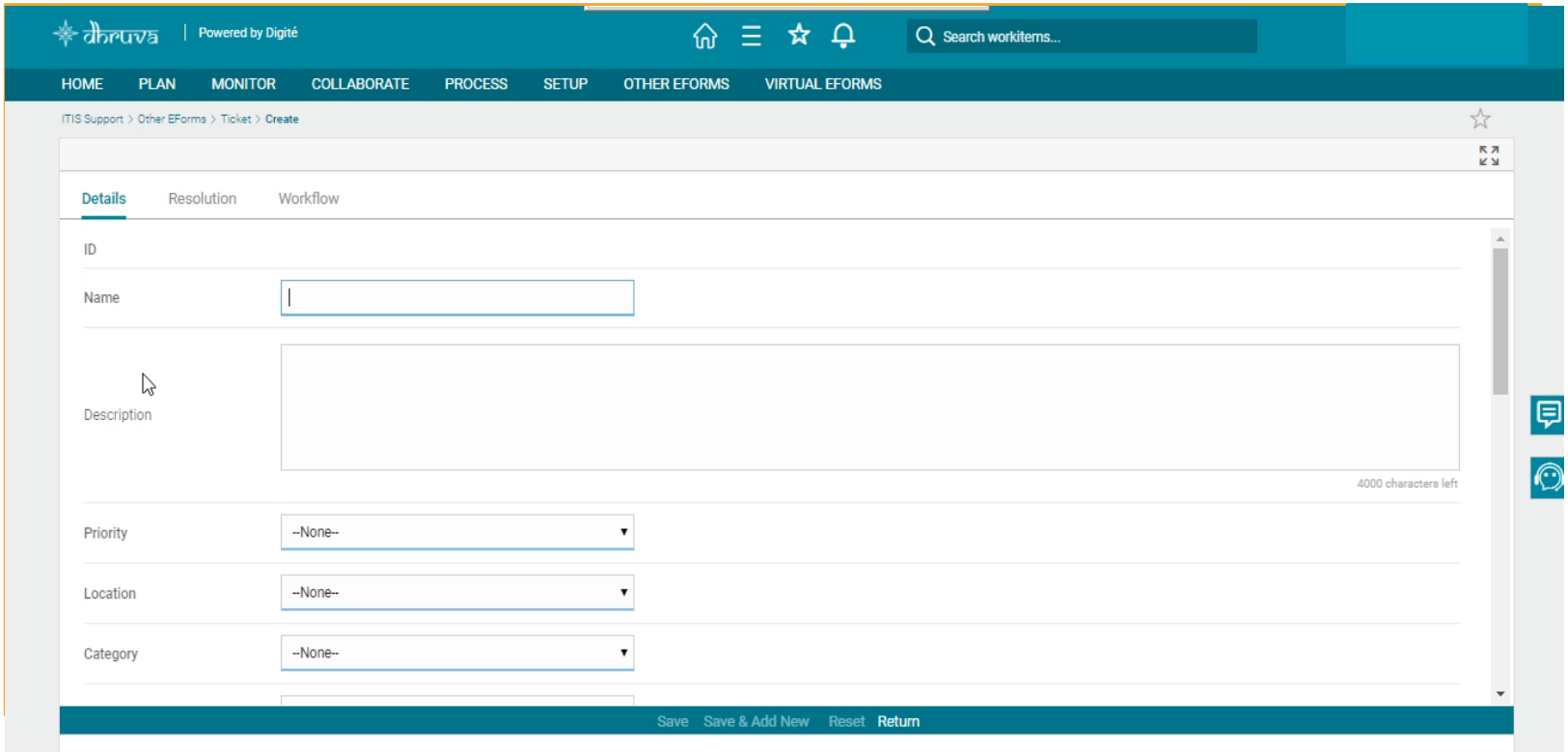
Similarity and Autofill to Improve Quality of Life



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AI based Agility Framework within Organizations

Add External to Internal transitions. Install 'AI Sensors' here.

Remove Internal transitions due to data-silos using AI and Data Engineering

❖ Build Environmental awareness into AI sensors by combining external information with internal mechanisms.

Ex :

- Crawling and parsing legal news on GDPR to inform the legal team. (Brexit + GDPR)
- Predict sales forecast by taking into account weather, customer sentiment etc. (Coronavirus)

❖ Work with Data Engineering team to systematically break these down using AI use-cases as objectives.

Ex :

- Transfer learning of efficient project execution across product suites
- AI to build feedback between Product Engineering and Product Support

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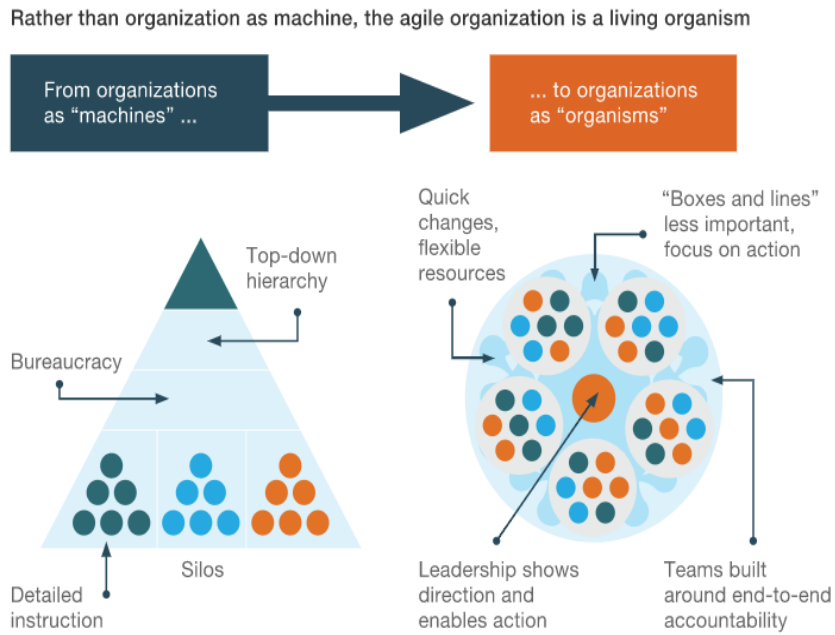
Changing Structure for Organizational Reflex

- Self organizing: Dynamically form self contained teams for achieving single objective and then dissolve once achieved .
- Failure tolerance : The path to success has lower probability than failure .Then why don't organizations attribute probability to failures ?
- Agile Pods: Give tasks to team based on success probability . AI to help think first principles and think probability



Source: https://www.mckinsey.com/business-functions/organization/our-insights/the-five-trademarks-of-agile-organizations

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Continuous Monitoring + XAI for Process Agility

- Leverage AI to continuously monitor projects at scale.
- Quantify and Predict deviations using ML/AI .
- Leverage XAI for root cause analysis while keeping the human-in-the-loop .
- Democratize process – Unify reporting using AI

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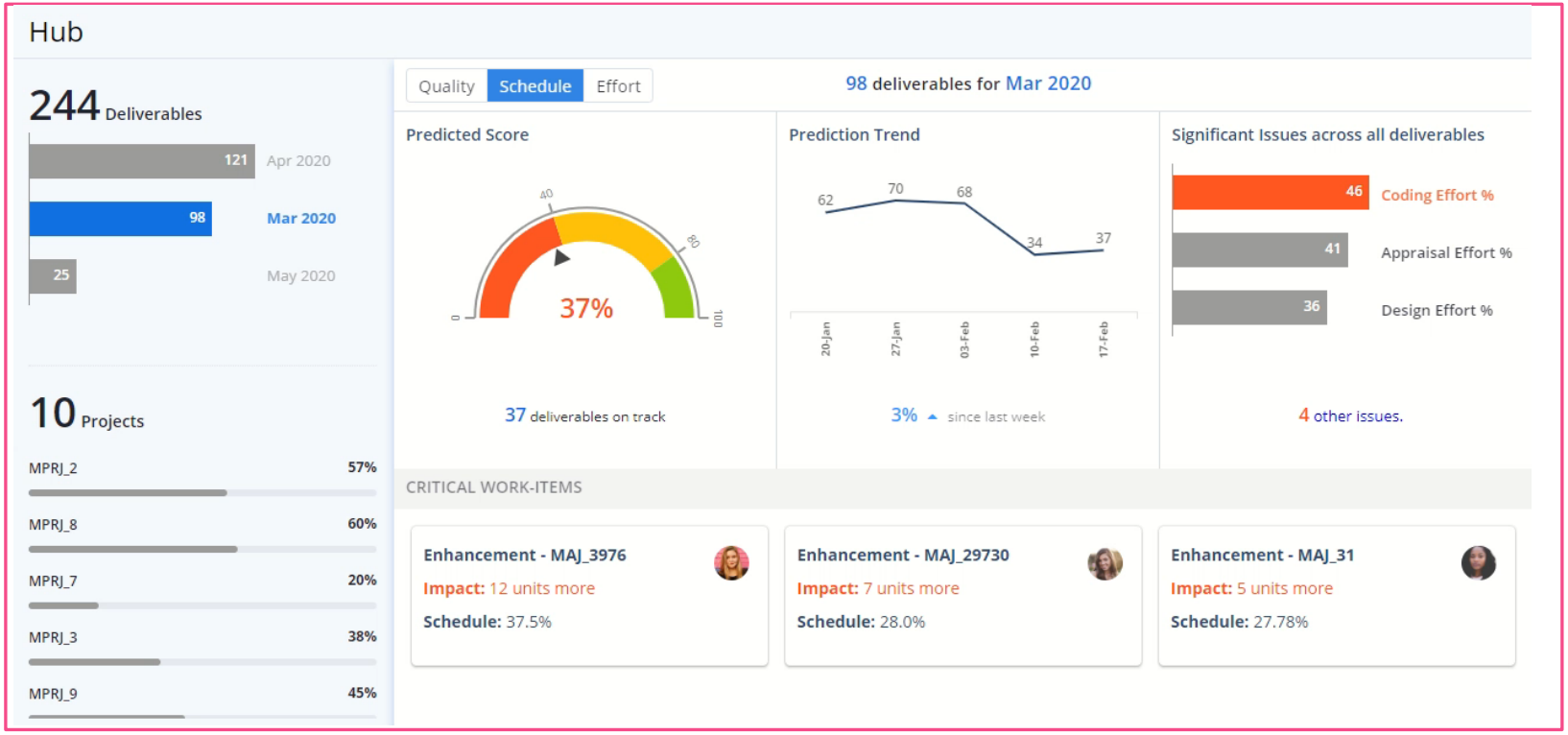
Continuous Monitoring Process Agility



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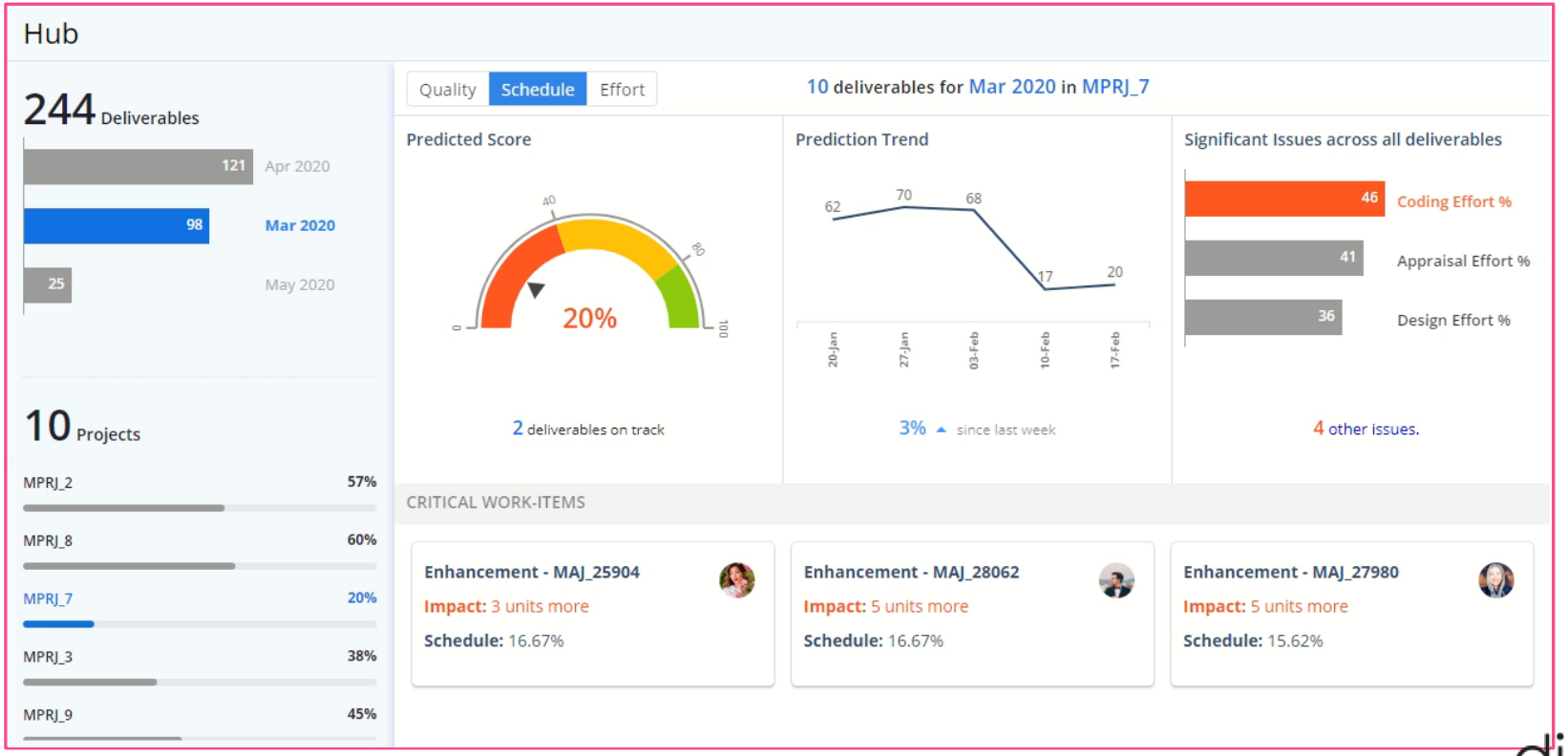
XAI to keep the human-in-the-loop



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Summary

- **Strategy**: Use AI/ML to improve situational awareness and work towards human + AI decision systems.
- **Structure**: Use AI/ML to create dynamic teams with clear accountability (Stem cell-organisations)
- **Process**: Use AI/ML to facilitate rapid iterations and experiments through continuous monitoring, tracking and predictions.
- **People**: Use AI/ML to make human capital management effective through ubiquitous AI use-cases that improve quality of life and enable dynamic team formation
- **Technology**: Continuously evaluate leading edge technologies like AI / ML, Big Data to maintain your edge.