Process Mining
&
Digital Process Twins

FERDOWSI UNIVERSITY OF MASHHAD

WEB TECHNOLOGY LABORATORY

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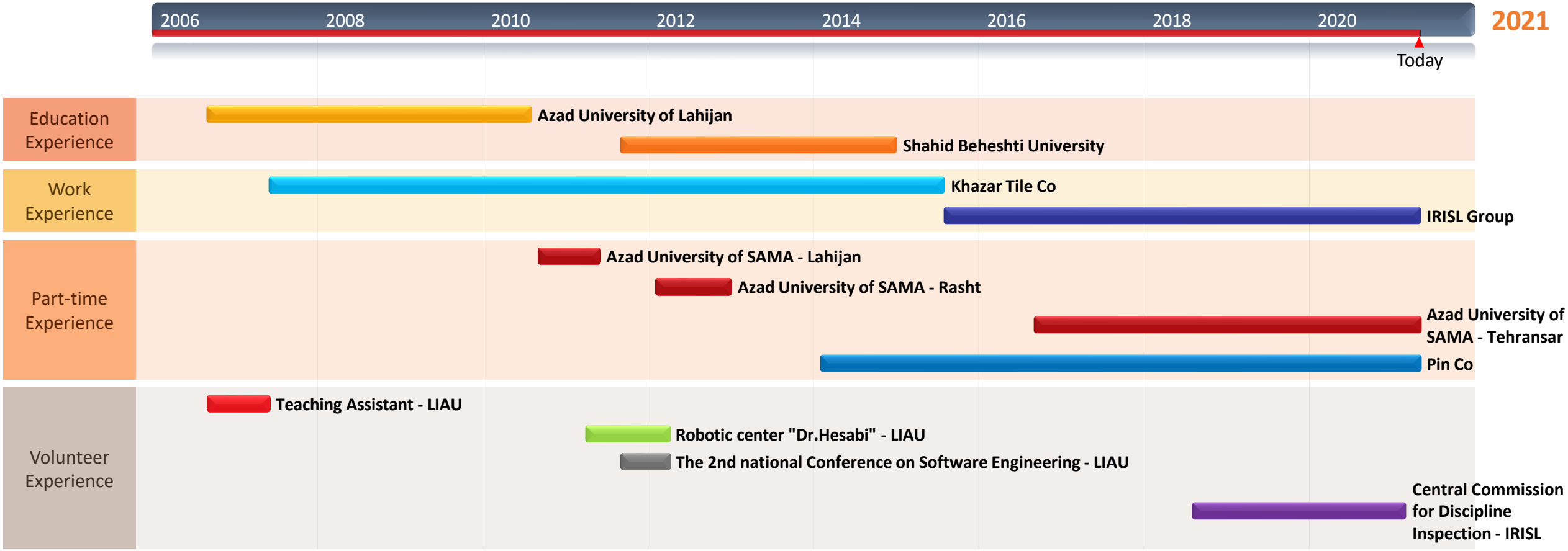
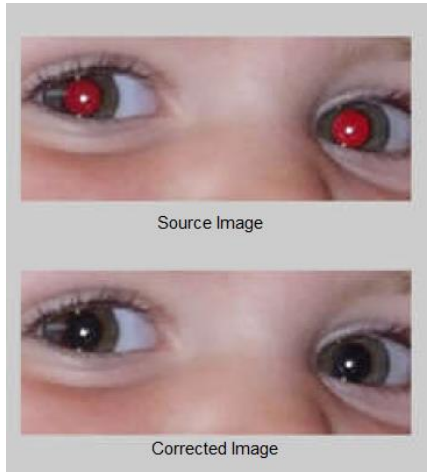


Master Thesis

- Presenting a new mechanism for Red Eye Detection and Correction based on Adaptive Fuzzy techniques
- Employing both Image Processing and Machine Learning
- using ANFIS (Neuro-Fuzzy)
- Automatically removing the red eye phenomenon in images that were shot in the dark

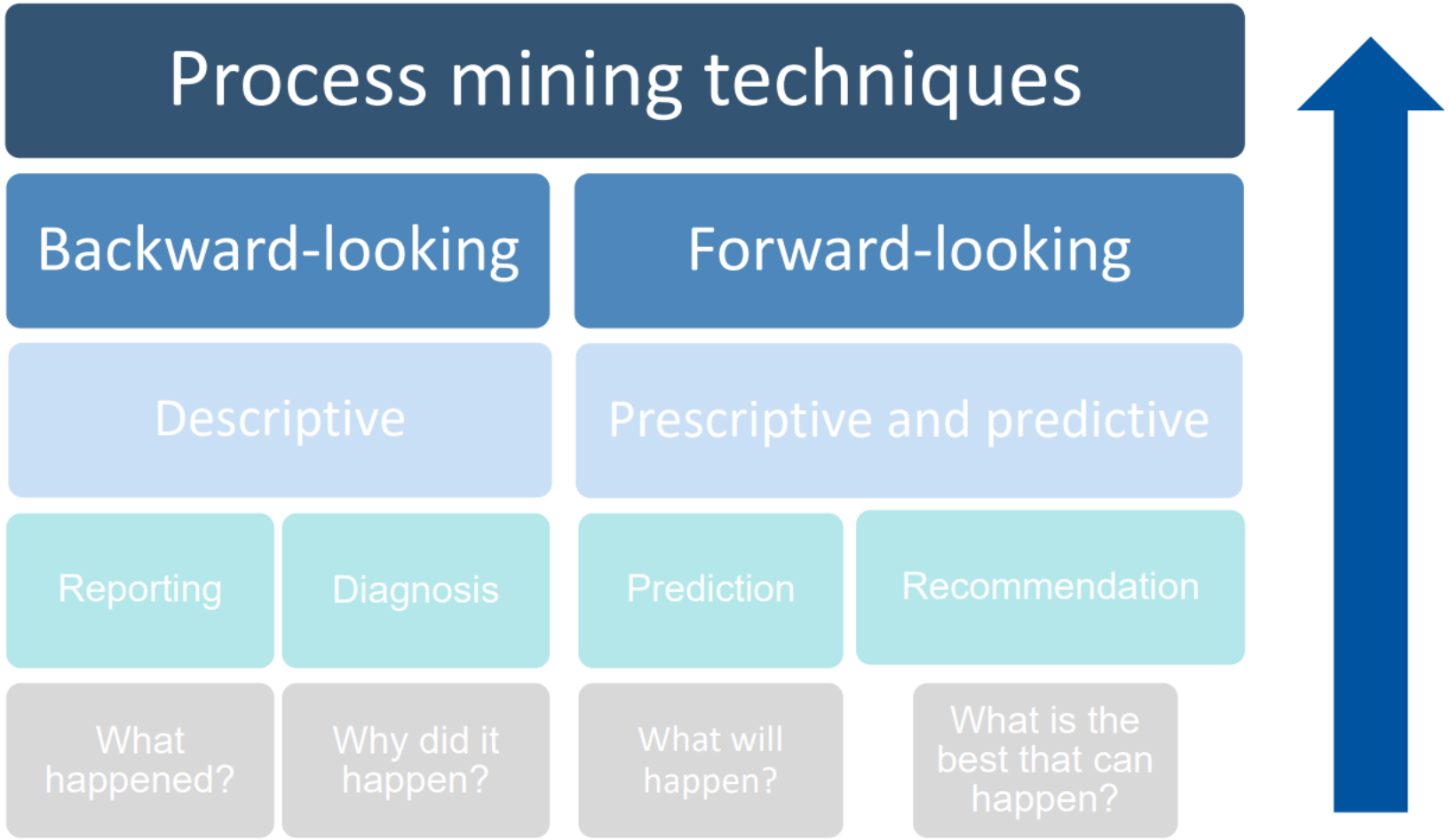


Supervisor: Dr. Ebrahimi Moghadam

Process Mining Leaders

Process Mining Leaders

Process Mining Techniques



Process Mining Roadmap

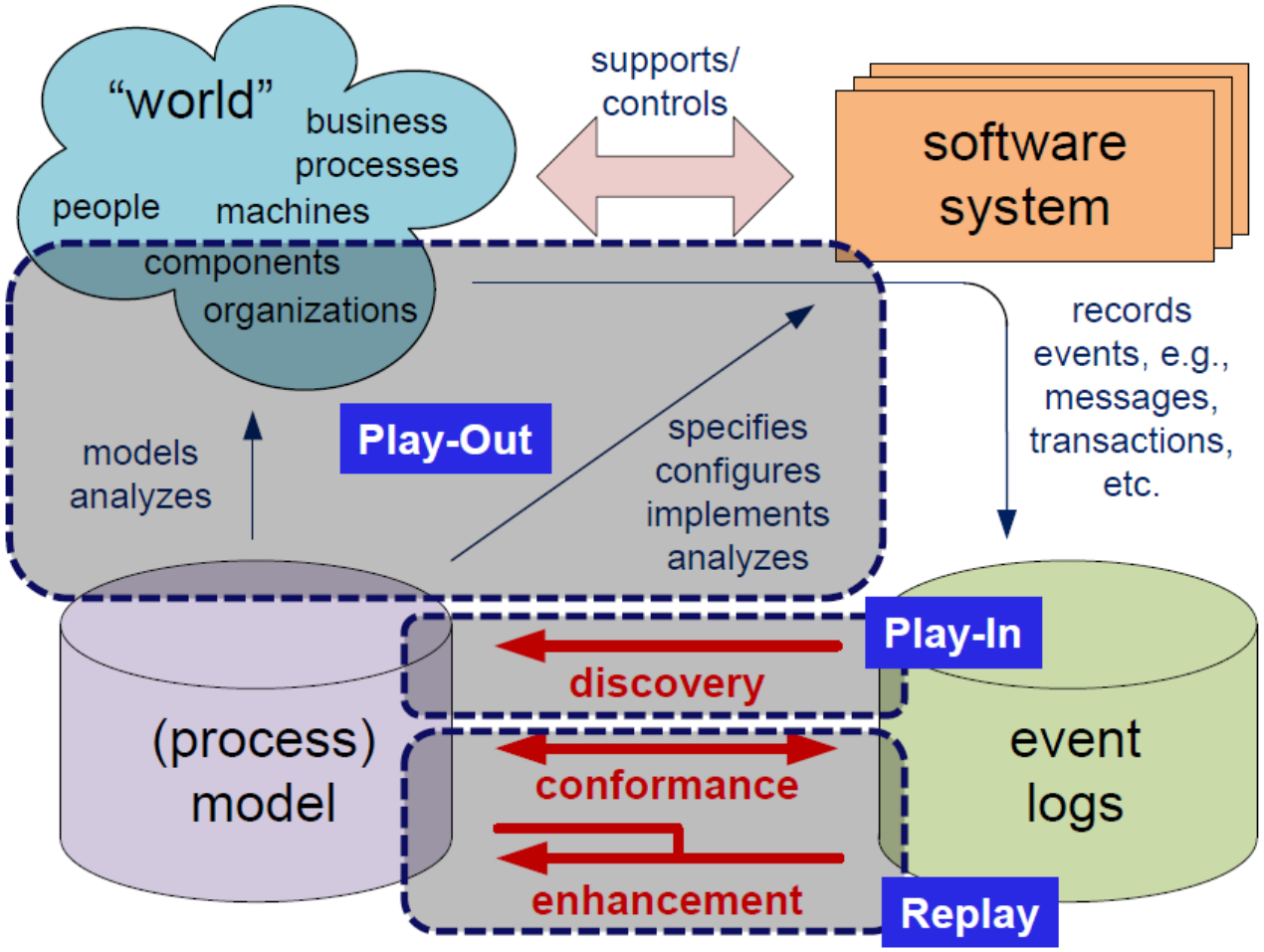
- Data driven

  Valuable insight (performance)
- Question driven

  Specific questions (uncertainties, deviation)
- Goal driven

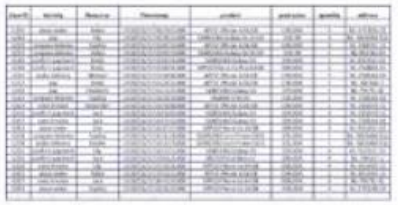
  KPIs (cost reduction, response times)

Types of Process Mining

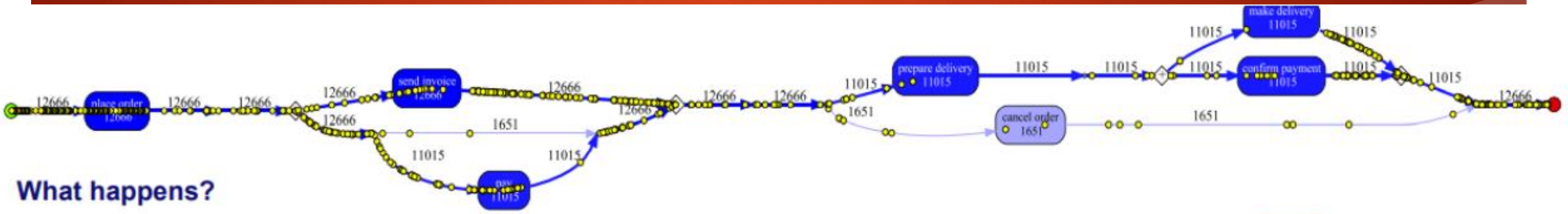


Discovery

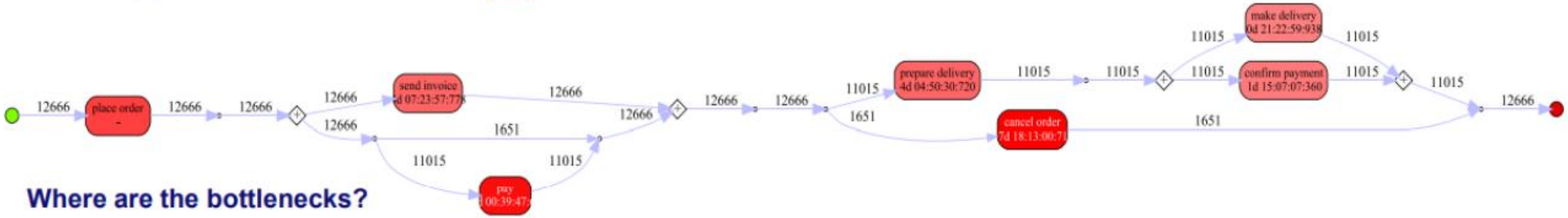
71,043 events
12,666 cases
7 activities



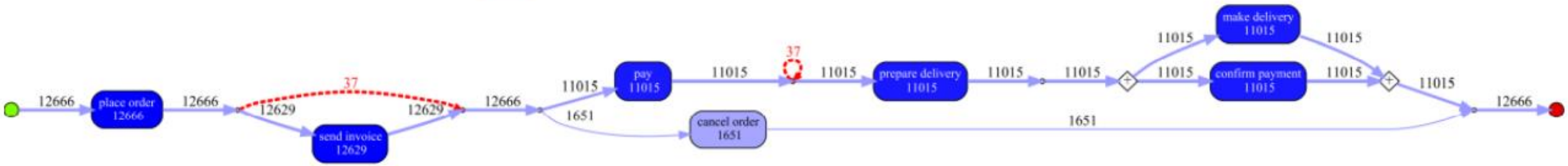
Conformance Checking



What happens?



Where are the bottlenecks?

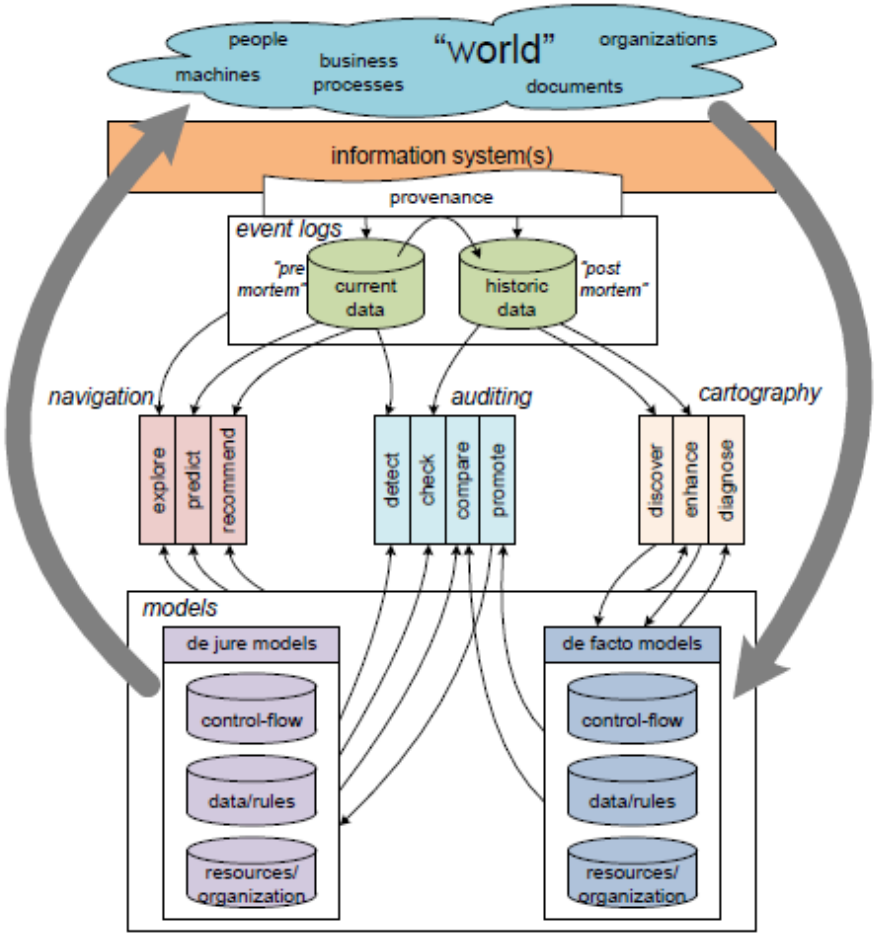


Where do we deviate from the happy path?

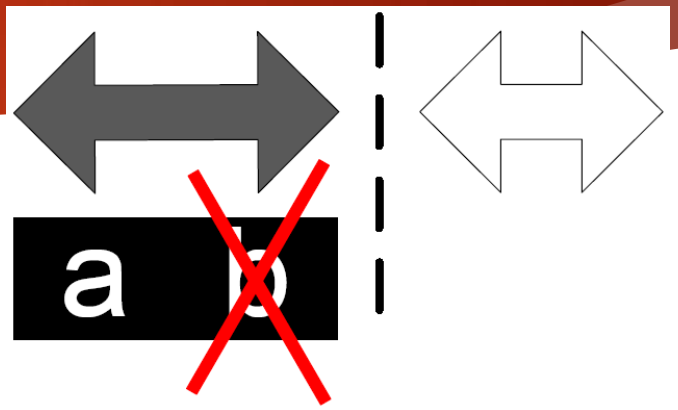
Answer to What Questions!

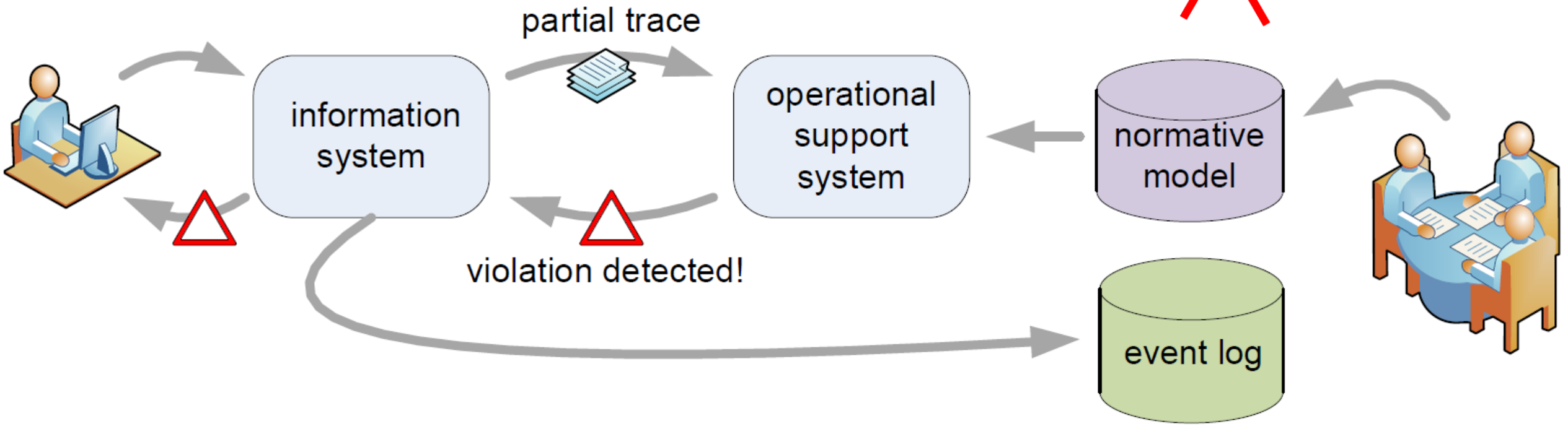
Happy Path

Refined Process Mining Framework

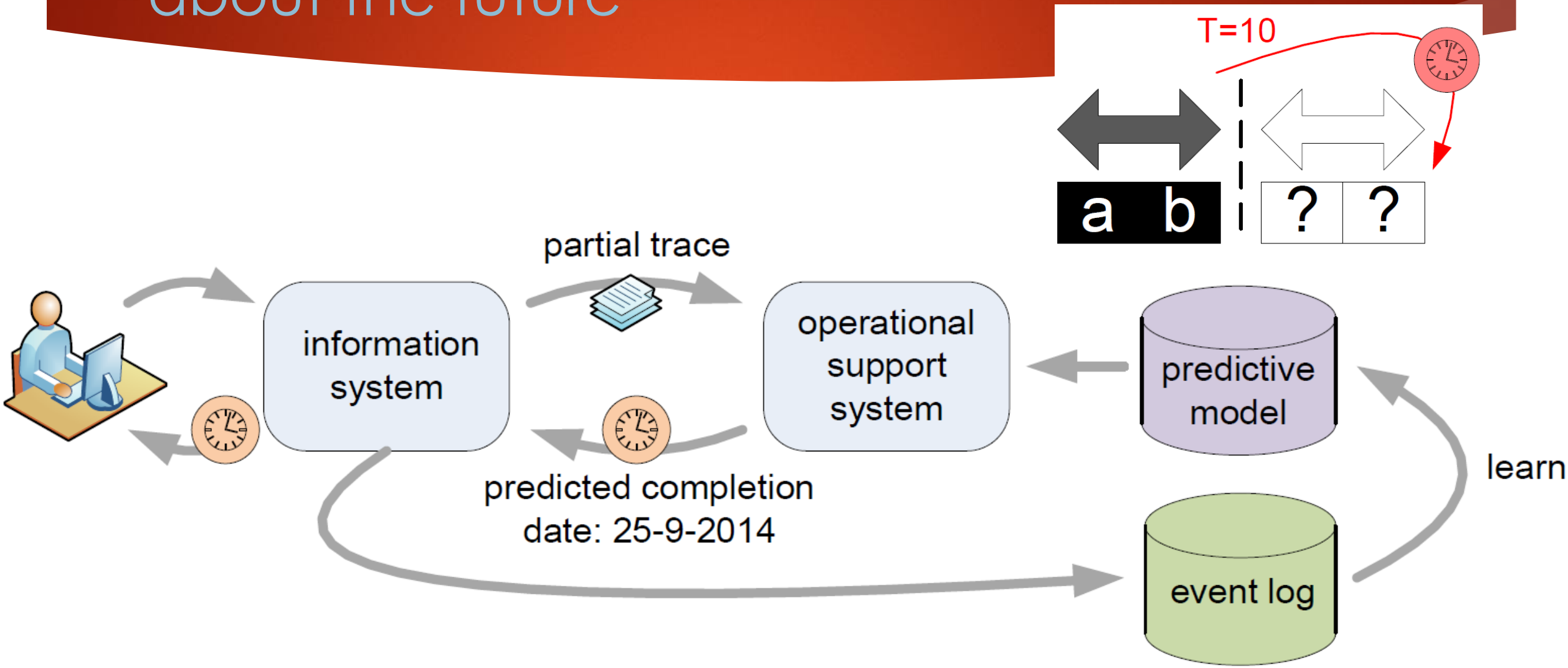


Detect: b does not fit the model

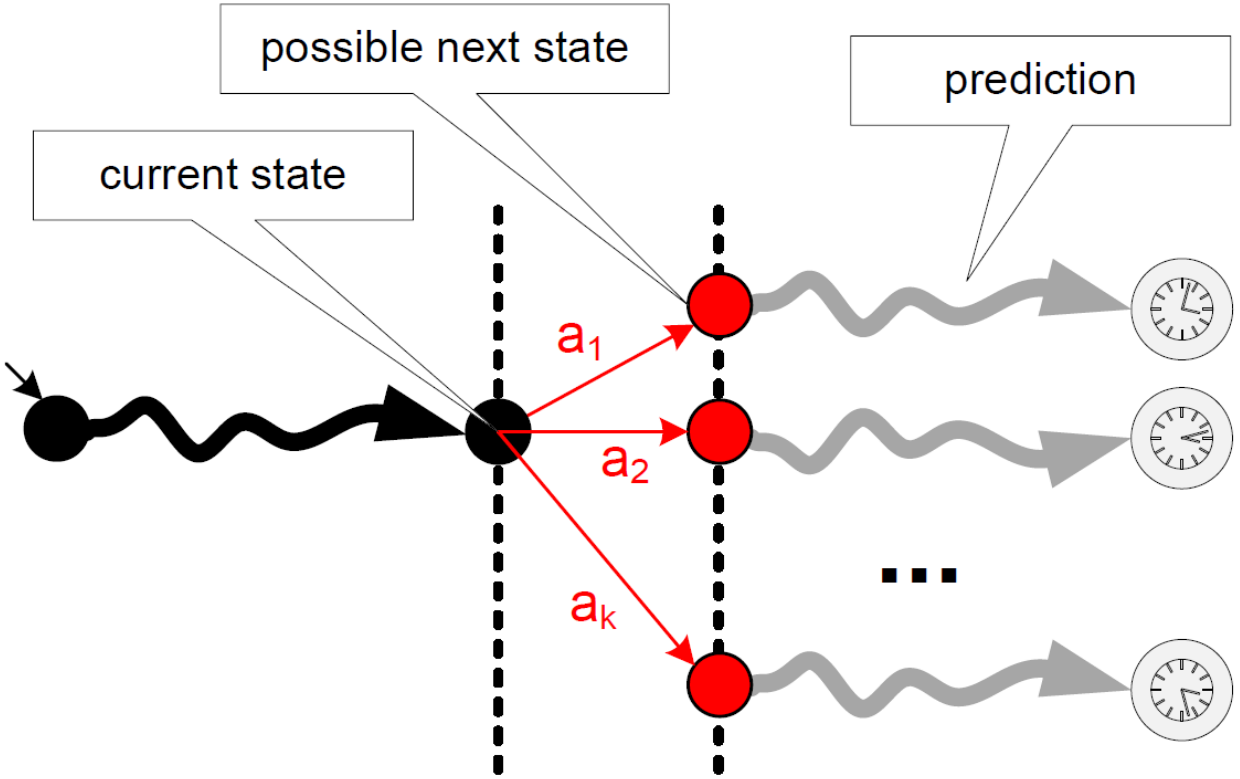




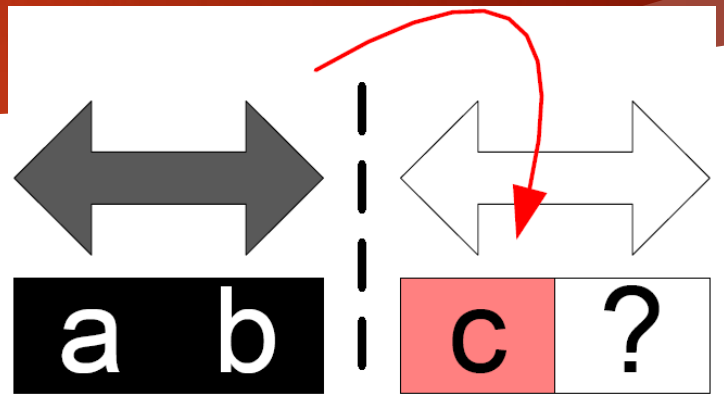
Predict: some prediction is made about the future

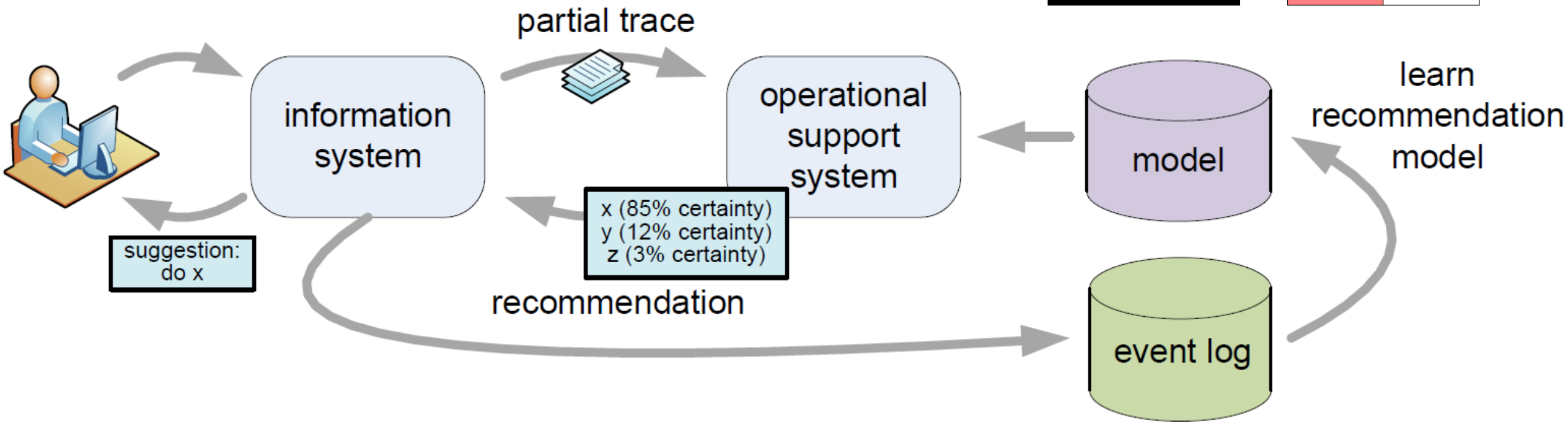


ability to predict -> ability to recommend

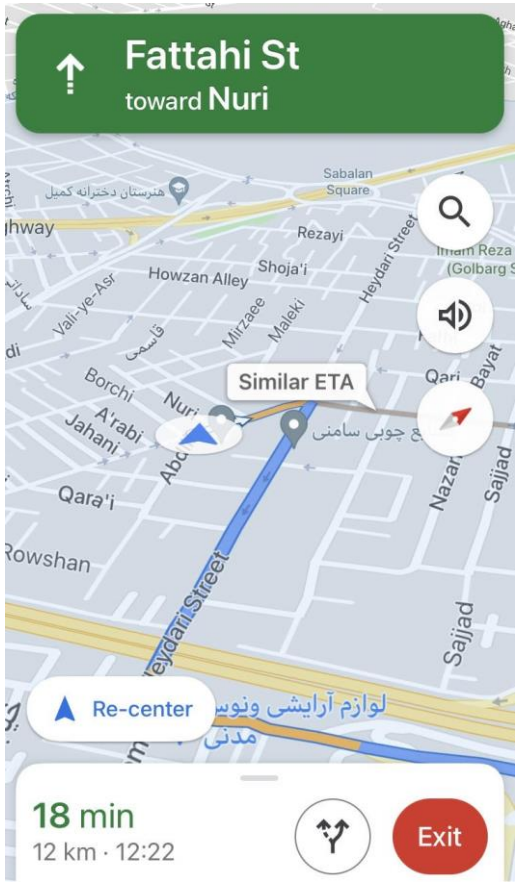


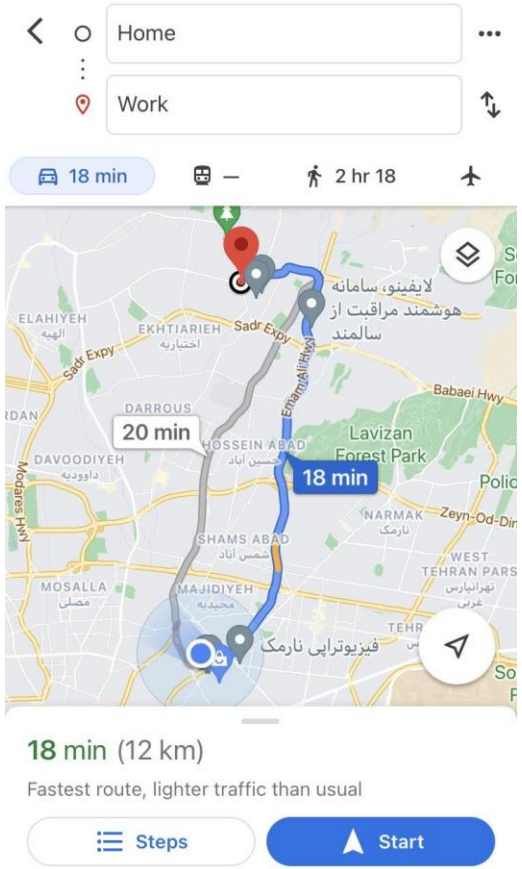
Recommend: based on past experiences c is recommended



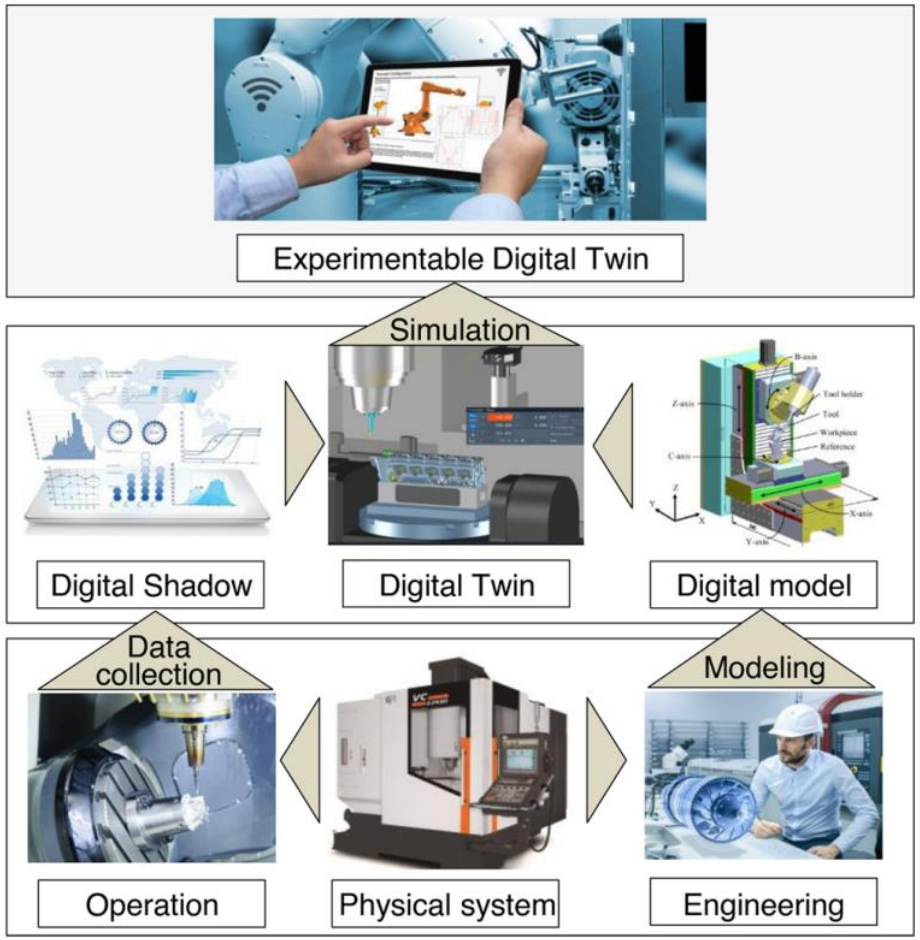


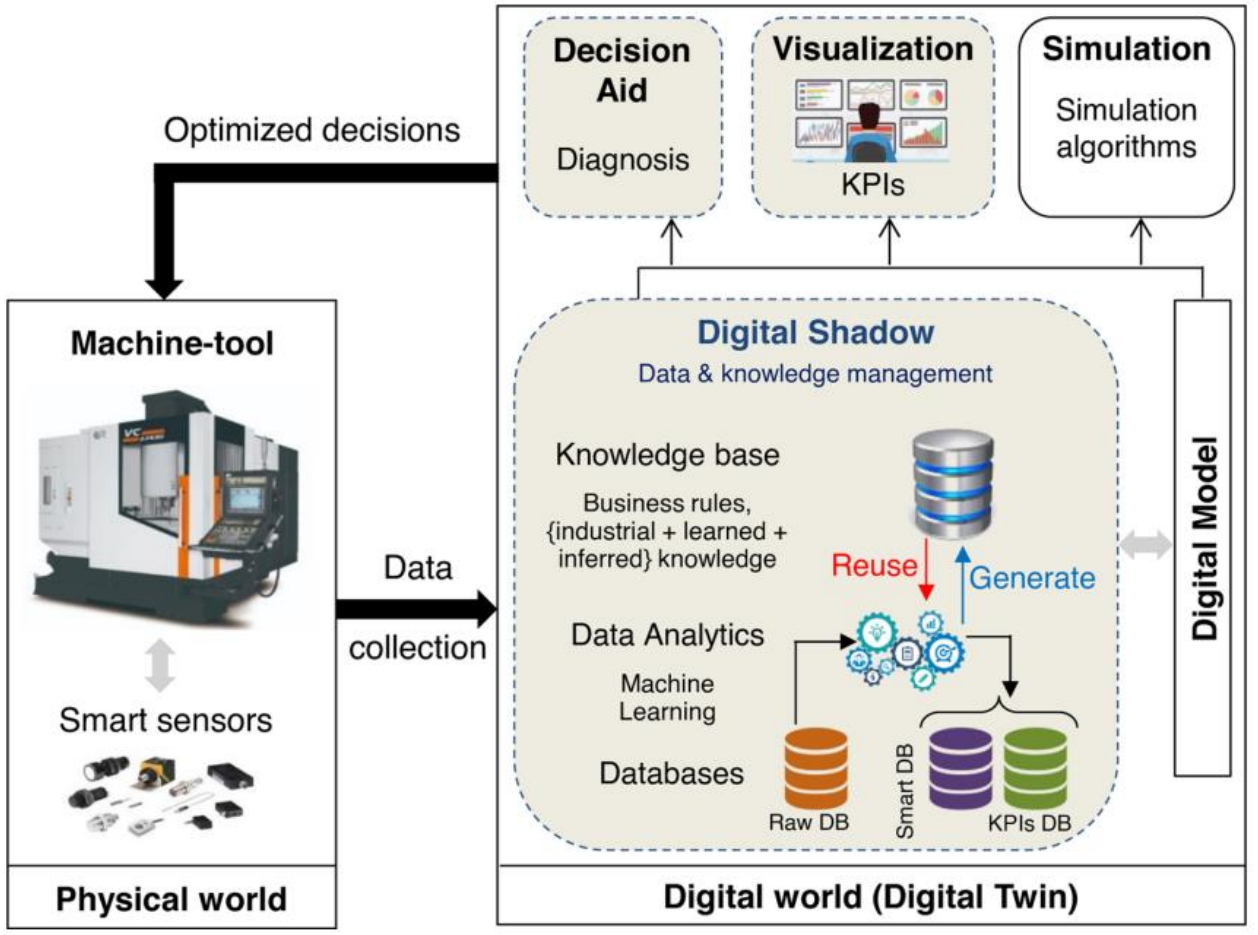
Process models are like maps



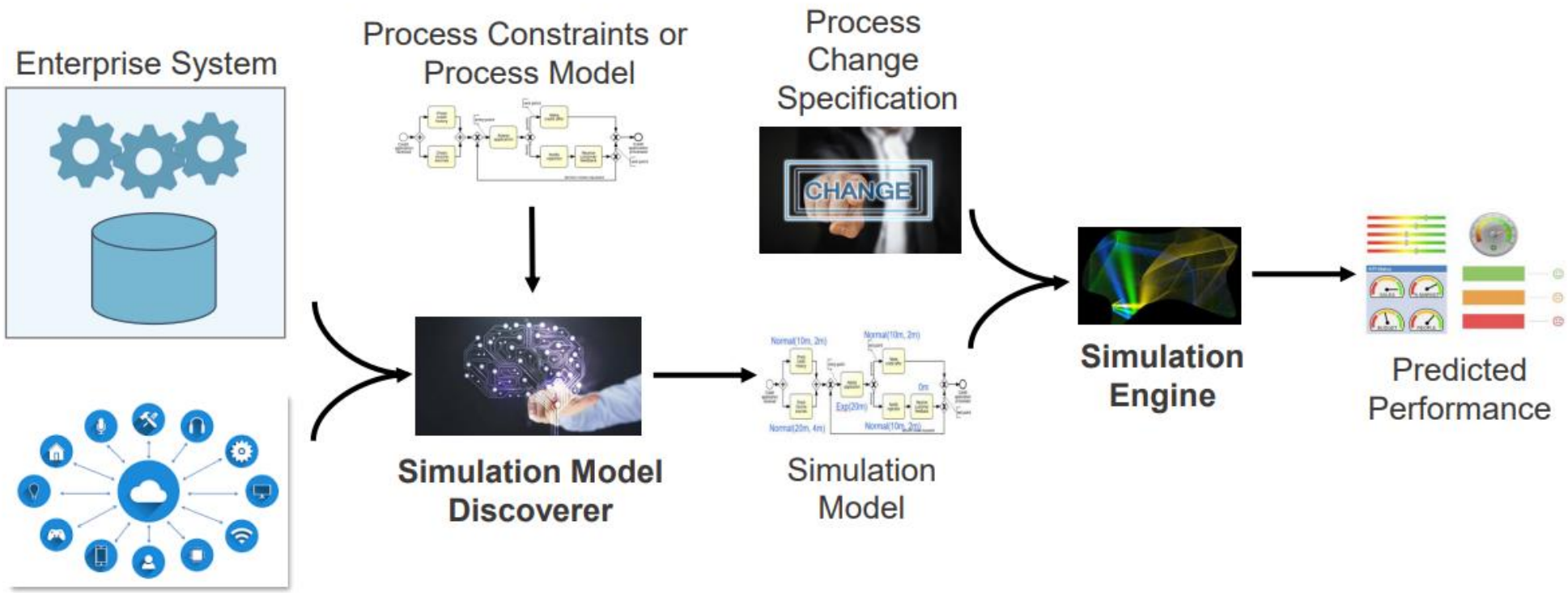


Digital Twins

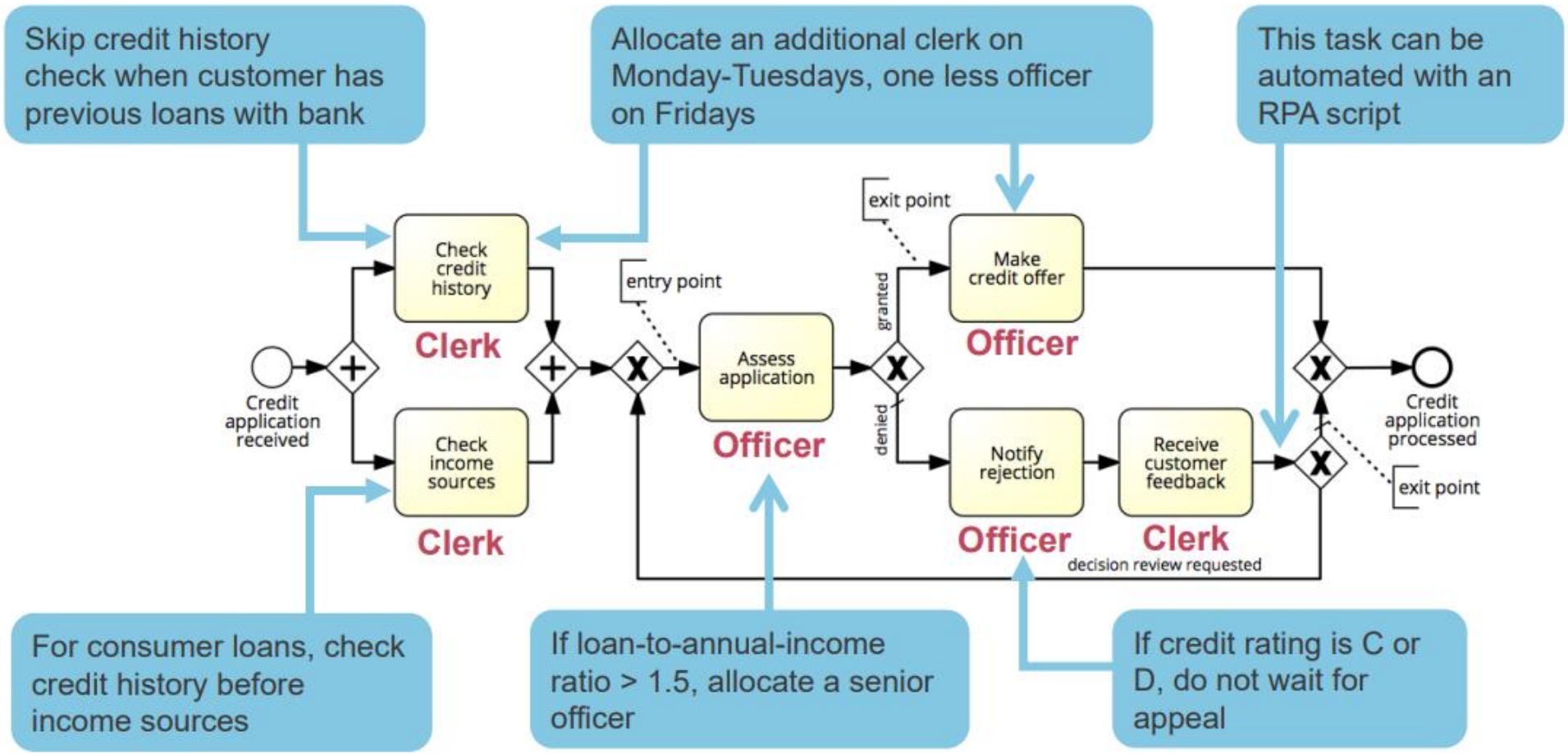




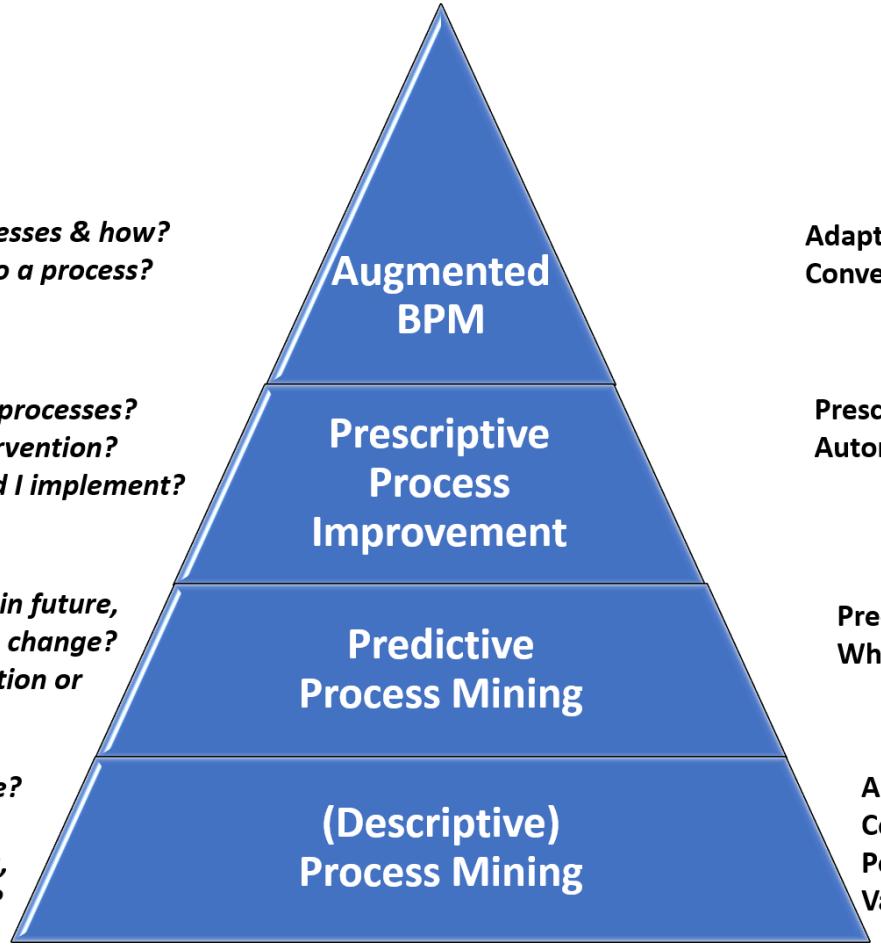
Digital Process twins



Automated Process Improvement



The Augmented BPM pyramid



When should I adapt my processes & how?
Where can I add most value to a process?

Adaptive Self-Driving Processes
Conversational Process Optimizers

What can I do to improve my processes?
When should I trigger an intervention?
Which process changes should I implement?

Prescriptive Process Monitoring
Automated Process Improvement

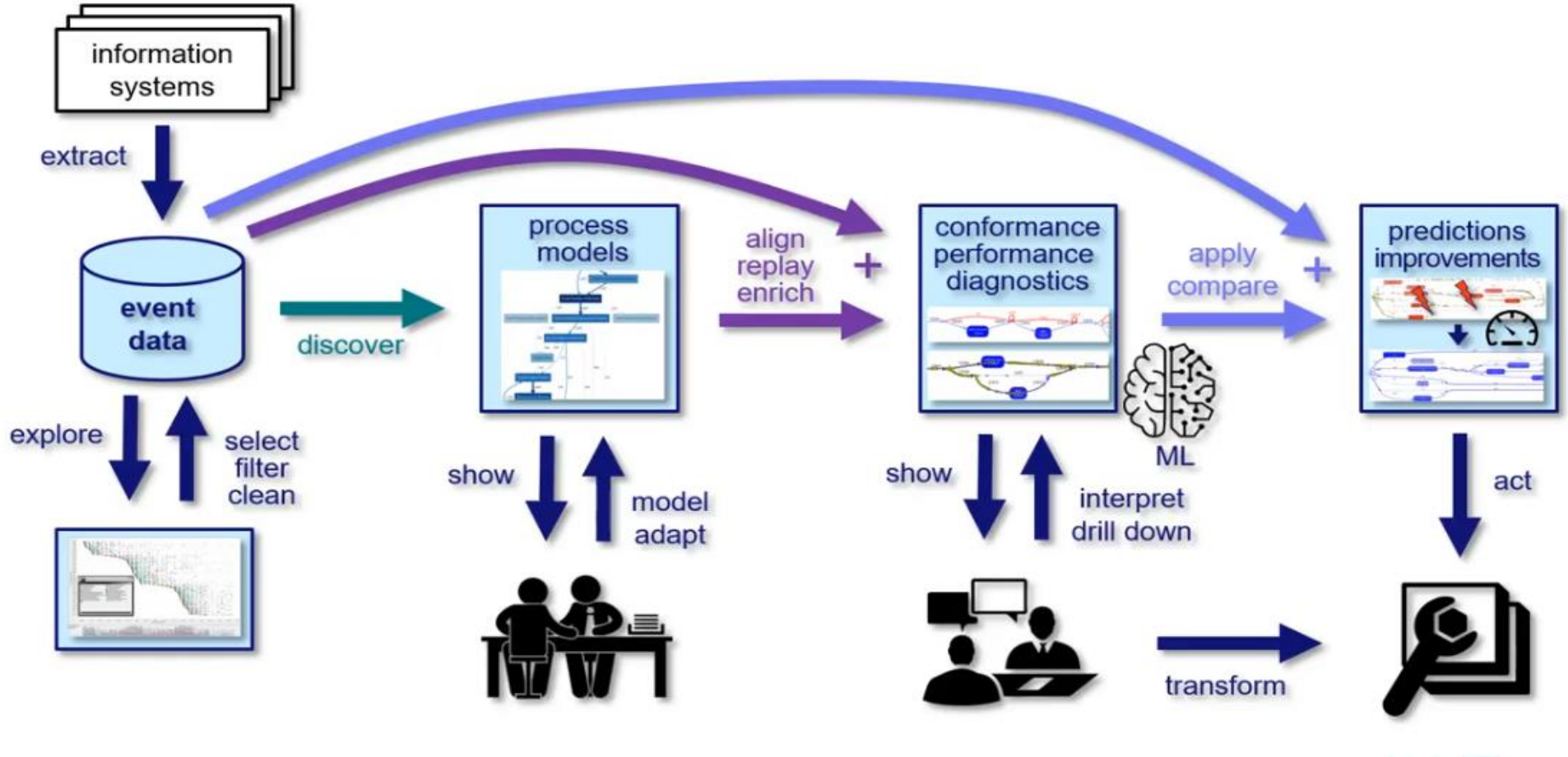
How will my process look like in future, if I leave it as-is, or if I make a change?
What's the impact of automation or change?

Predictive Process Monitoring
What-If Digital Process Twins

How do my processes look like?
Where are the bottlenecks, wastes, compliance violations, positive & negative deviance?

Automated Process Discovery
Conformance Checking
Performance Mining
Variant Analysis

Turning data into value!



Thank you for your attention!