

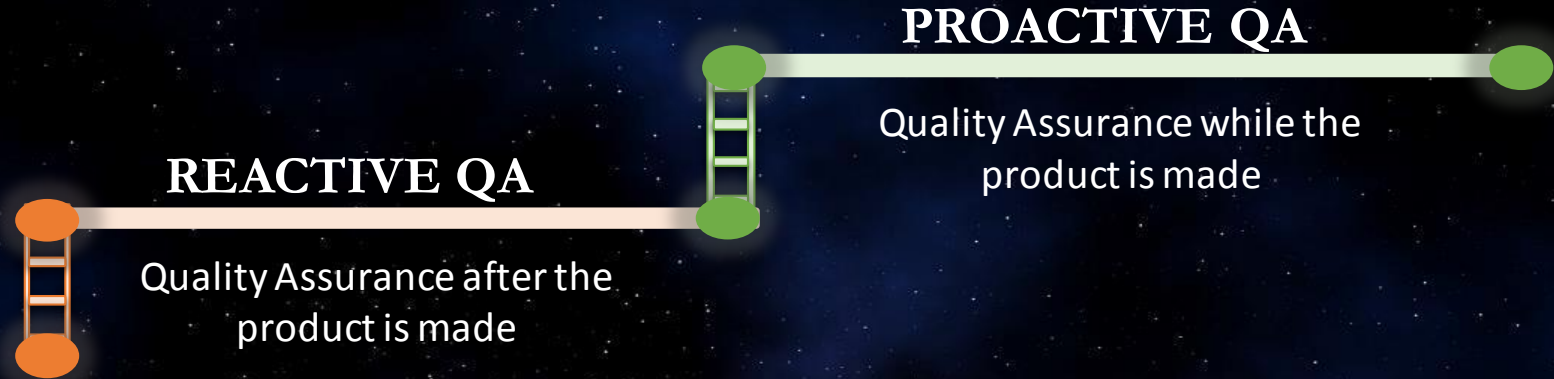
# Cognizant

## As The World Turns

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Adonis Celestine

# REACTIVE TO PROACTIVE



Yesterday

# PROACTIVE TO PREDICTIVE



Today

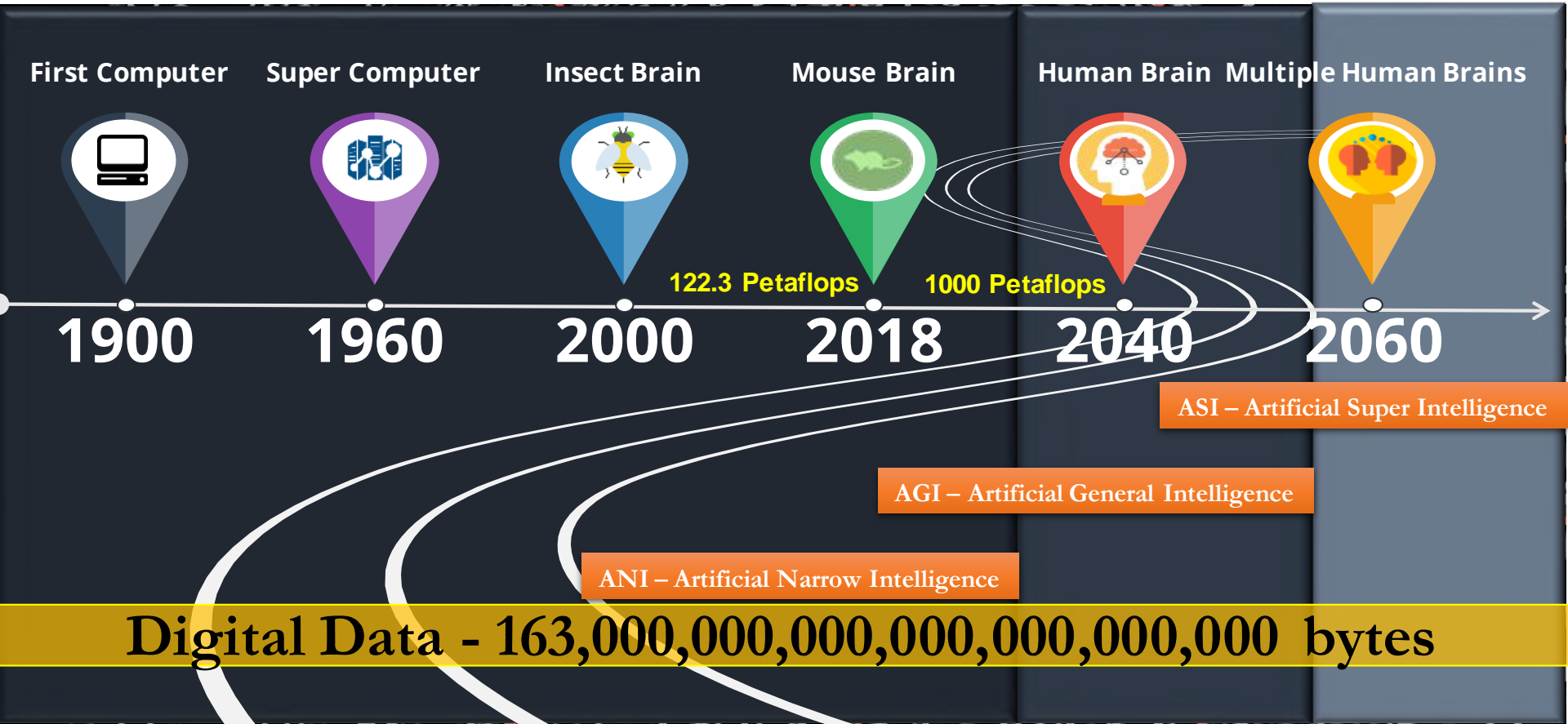
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# PREDICTIVE QUALITY ASSURANCE

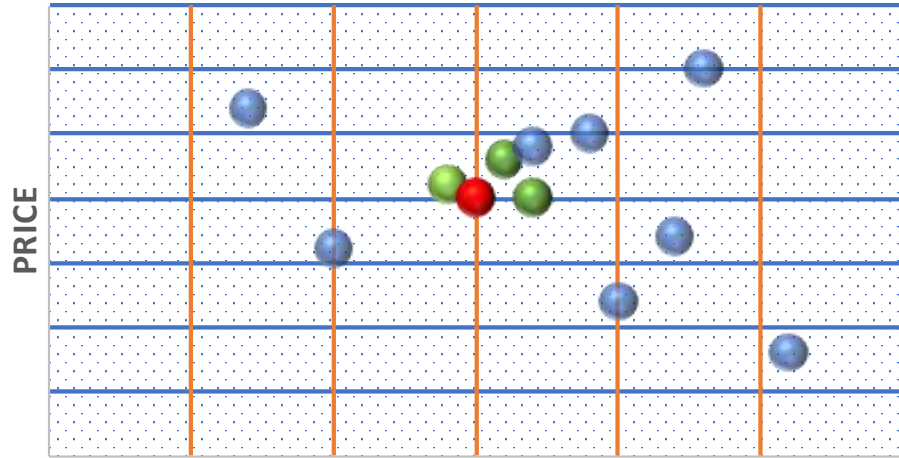
An ML Driven Approach

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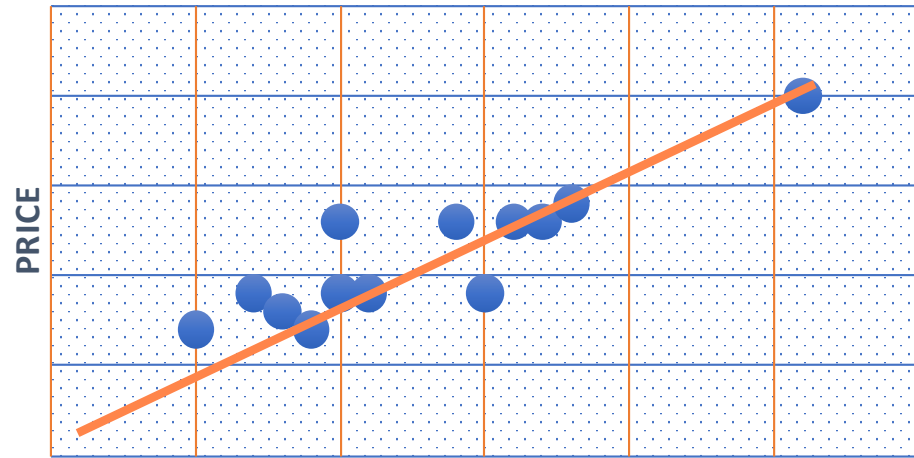
# THE RISE OF MACHINE INTELLIGENCE



# INTELLIGENCE FROM DATA



BUILDING ATTRIBUTES



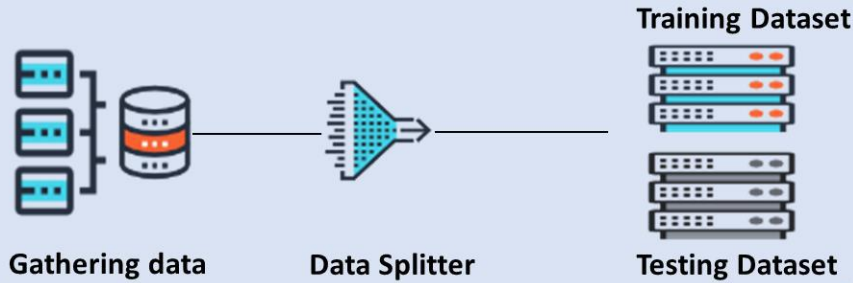
BUILDING ATTRIBUTES



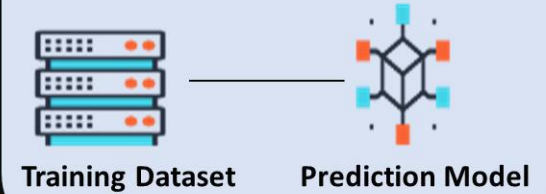
# DATA → PATTERNS → PREDICTIONS



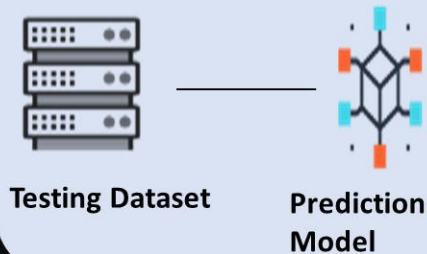
## 1 Data Gathering & Processing



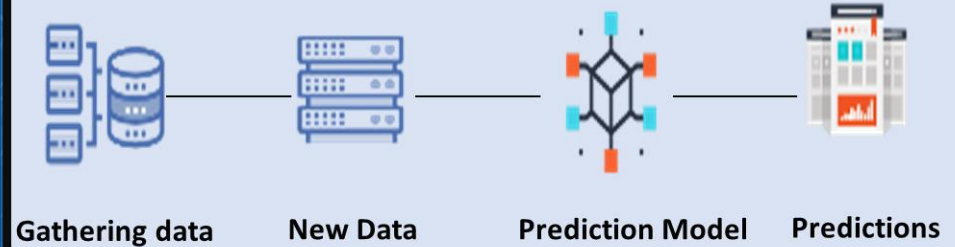
## 2 Choosing the right Model



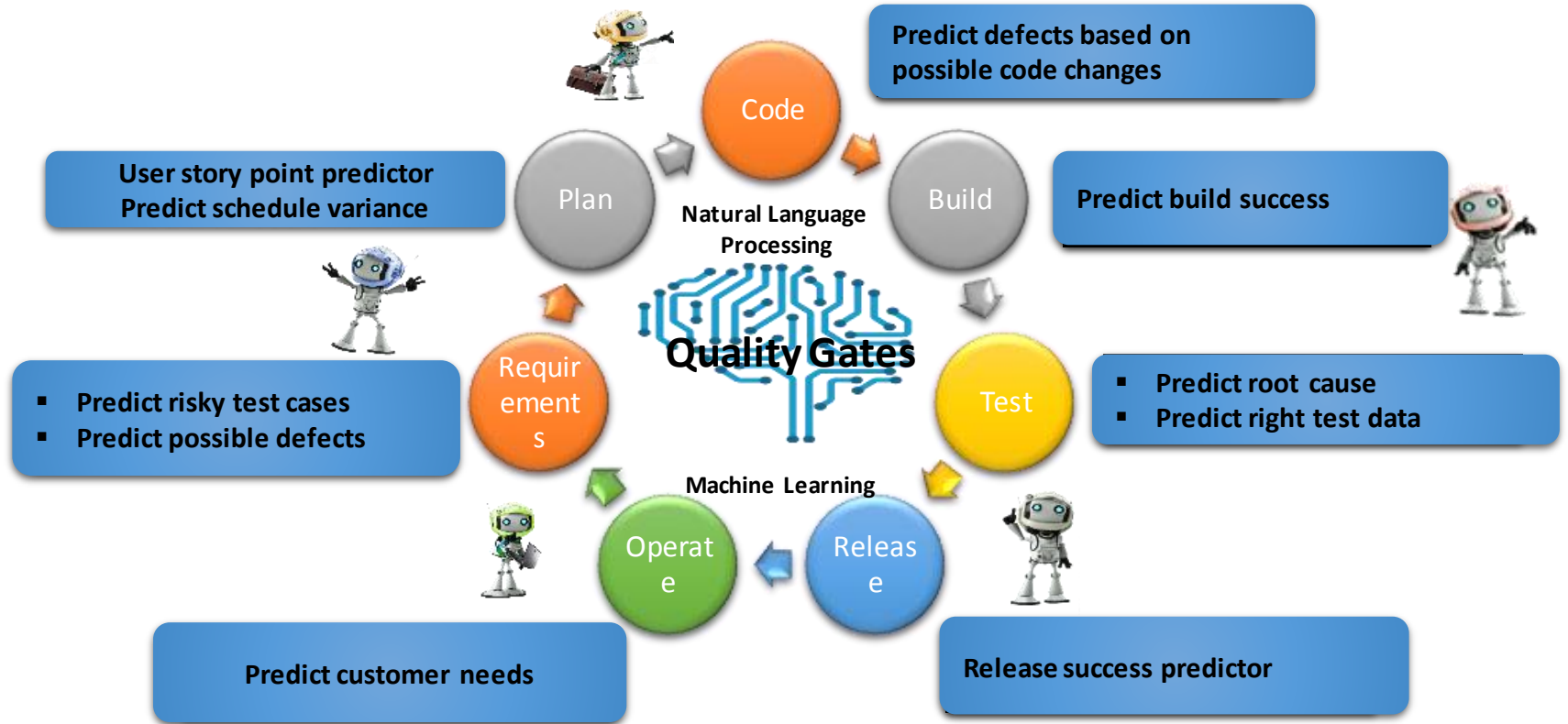
## 3 Evaluate the Model



## 4 Predicting Outcomes for new data

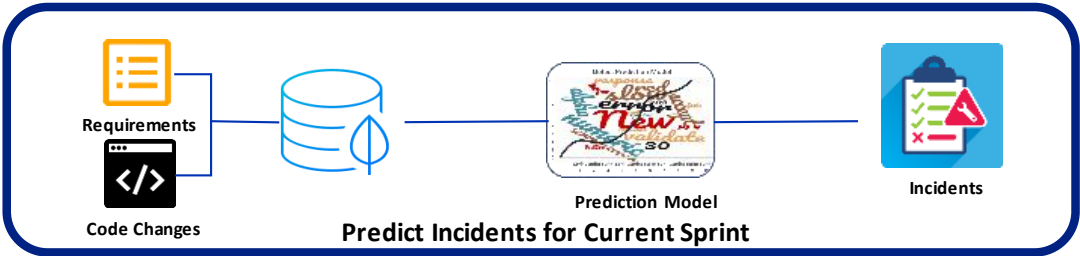
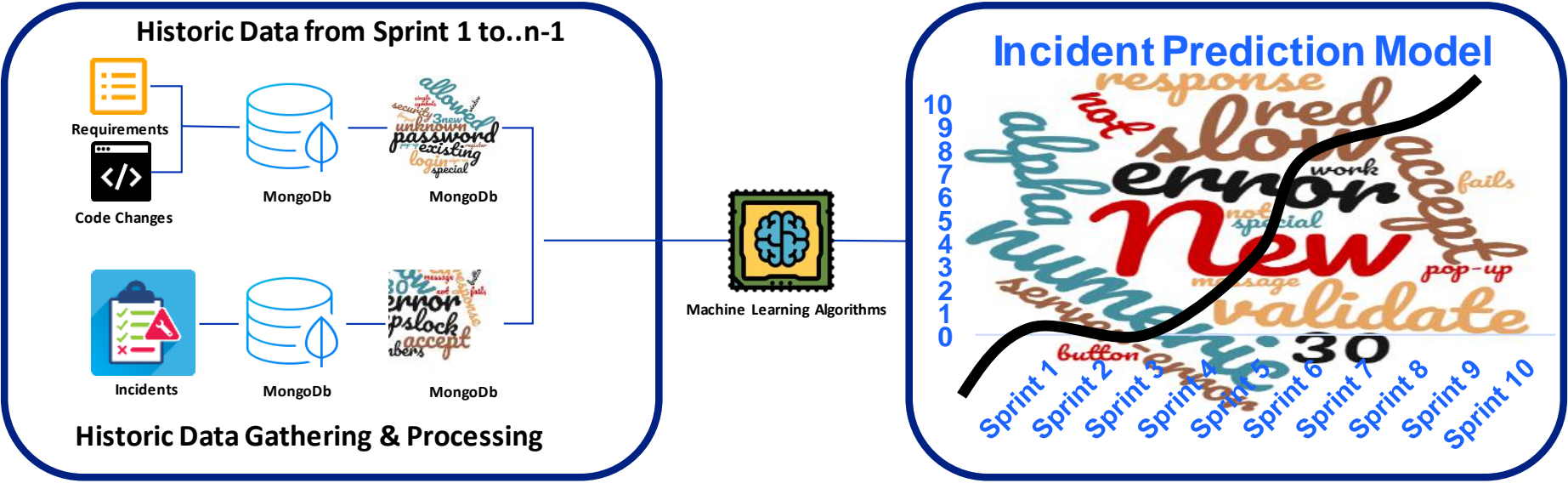


# QA PREDICTIONS




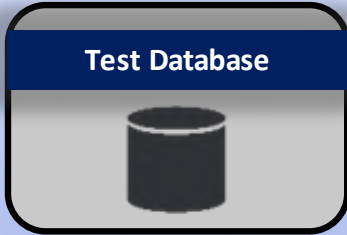


# EXAMPLE 1: INCIDENT PREDICTION



# EXAMPLE 2: TEST DATA PREDICTION

Production Database			
			
Production Data Combinations			
Id	Mode of Payment	Room Type	Discount
0094625	Netbanking	Triple	Corporate
0094629	Creditcard	Double	Early Payment
0096638	Cash	Double	Corporate
0084829	Creditcard	Single	Corporate

Test Database			
			
Test Data Combinations			
Id	Mode of Payment	Room Type	Discount
0094636	Netbanking	Double	Corporate
0094640	Debit	Single	Corporate
00976489	Cash	Double	Corporate
0084829	Creditcard	Single	Corporate

Missing Data Combinations			
Id	Mode of Payment	Room Type	Discount
0094625	Netbanking	Triple	Corporate
0094629	Creditcard	Double	Early Payment

# EXAMPLE 3: REQUIREMENT PREDICTION

By [Jordan Rivera](#) (Seattle) - [See all my reviews](#)

REAL NAME

This review is from: **Samsung UN8559 85-Inch 4K Ultra HD 120Hz 3D Smart LED UHDTV (Black) (Electronics)**

I was going to fund my daughters wedding in Hawaii, but I figured this Samsung TV would last much longer.



Sentiment

User Experience

Functionality

Performance

**Customer's Perception is Reality**

# QA PREDICTIONS DASHBOARD



J, AdonisStanislasSheeban  
Sr. Manager - Projects  
(User)

project1 ▾



- Dashboard
- BIZINSIGHT
  - Defect Backlog Pruner
  - Defect Predictor**
  - TC Failure Predictor
  - Story Point Predictor
  - Defect Count Predictor
- DEVINSIGHT
- TESTINSIGHT
- OPSINSIGHT
- CXINSIGHT
- HELP
- Contact us

## Defect Predictor (BIZ)

### Description

Identify defect prone areas and recommend indicative defects for retest based on user stories using machine learning.

### Total Defects Predicted

51

### Analysis Summary

Total Sprints Analyzed : 8  
Total User stories Analyzed : 91  
Total Defects Analyzed : 83

### Input Summary

Current Sprint ID : 9  
Total User stories Analyzed in  
Current Sprint : 10

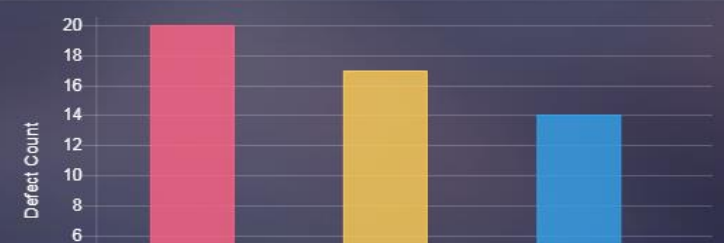
### Model Accuracy

Model accuracy not applicable  
for recommendation systems.

### Defect Prediction Distribution By Severity



### Defect Prediction Distribution By Priority

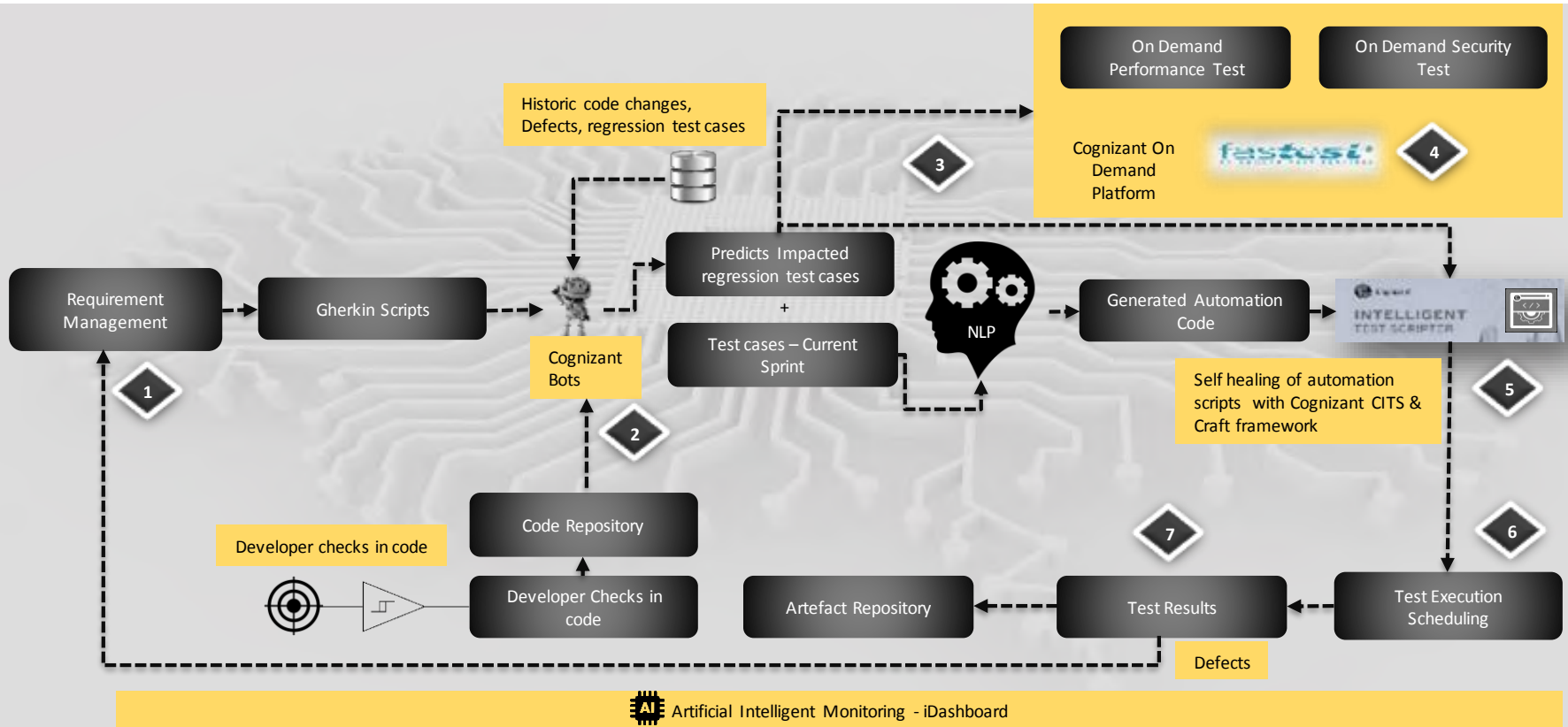


# PREDICTIVE TO COGNITIVE



Tomorrow

# COGNITIVE QUALITY ASSURANCE



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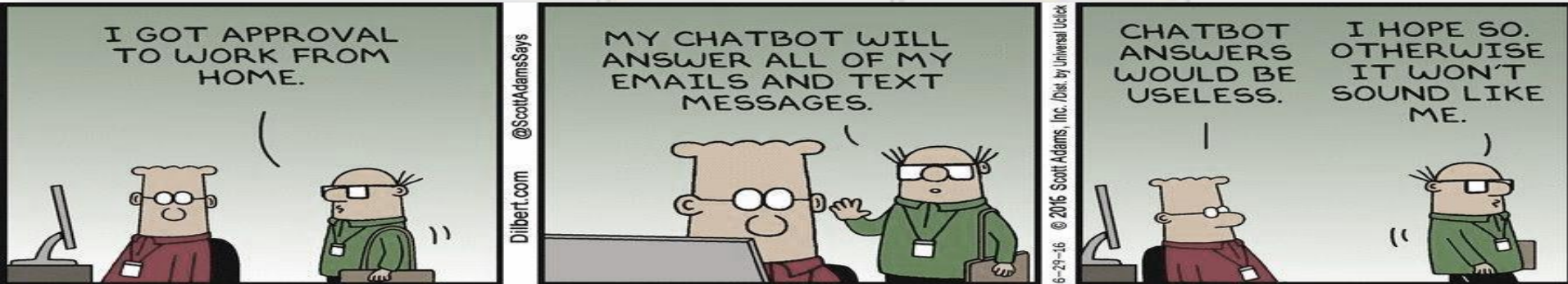
# Are predictions predictable?

QA of Machine Intelligence

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# PREDICTABILITY OF PREDICTIONS

Non Deterministic Nature | Platforms & Environment | Linguistic Variations



True: husky True: husky True: wolf

## Smart Devices & Dumb Experiences



# TEST THE UN-TESTABLES



Turing Test



Visualization



Crowd Testing



Bot Vs Bot



Metrics



API Testing

# TESTING THE COGNITIVE ASSISTANTS

Validate Responses



Text	Time
1. The first row of the table is...	00:00:01
2. The second row of the table is...	00:00:02
3. The third row of the table is...	00:00:03
4. The fourth row of the table is...	00:00:04
5. The fifth row of the table is...	00:00:05
6. The sixth row of the table is...	00:00:06
7. The seventh row of the table is...	00:00:07
8. The eighth row of the table is...	00:00:08
9. The ninth row of the table is...	00:00:09
10. The tenth row of the table is...	00:00:10

Text to Speech



Skills Testing

Accent Testing

Crowd Testing

Regression



# DEMO



# LIMITATIONS & LEARNINGS

Clear business need and use case

Finding right data attributes

Cannot predetermine the success of the model

Good infrastructure requirements

Interpretation & Visualisation of results

Steep learning curve

# THE BEGINNING OF THE END

How will AI impact software testing?

How will AI impact you?

**“Natural Stupidity Is More Dangerous Than Artificial Intelligence”**

# Thank You

