

# Artificial Intelligence Machine Learning & Chatbots

~ Oh My ~

**Chris Chagnon**  
@Chagn0n #Shine19



# Agenda

## What is AI?

- Overview
- AI Technologies
- Terminology
- General Uses

## AI in ITSM

- End-Users
- Technical Agent
- Process Owners & Managers
- Examples

## Getting Started

- How to?

## The Future

- Where is AI headed?
- Shaping AI's Future

Section 1

# What is AI?

# What is AI?

## Artificial Intelligence is...

...when machines carry out human like **tasks**

...Programs and applications that learn, or use logic

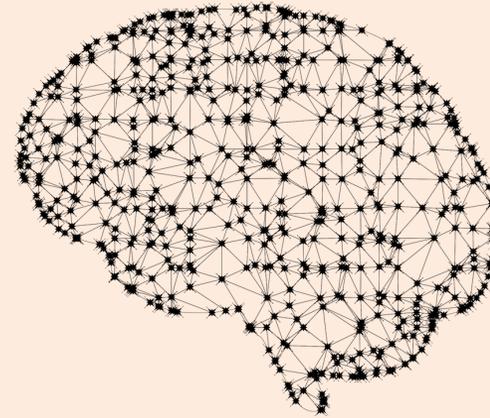
...intelligence demonstrated by machines

...**math**

## Artificial Intelligence is NOT...

...Skynet, the terminator, the end of the world

...going to replace all workers

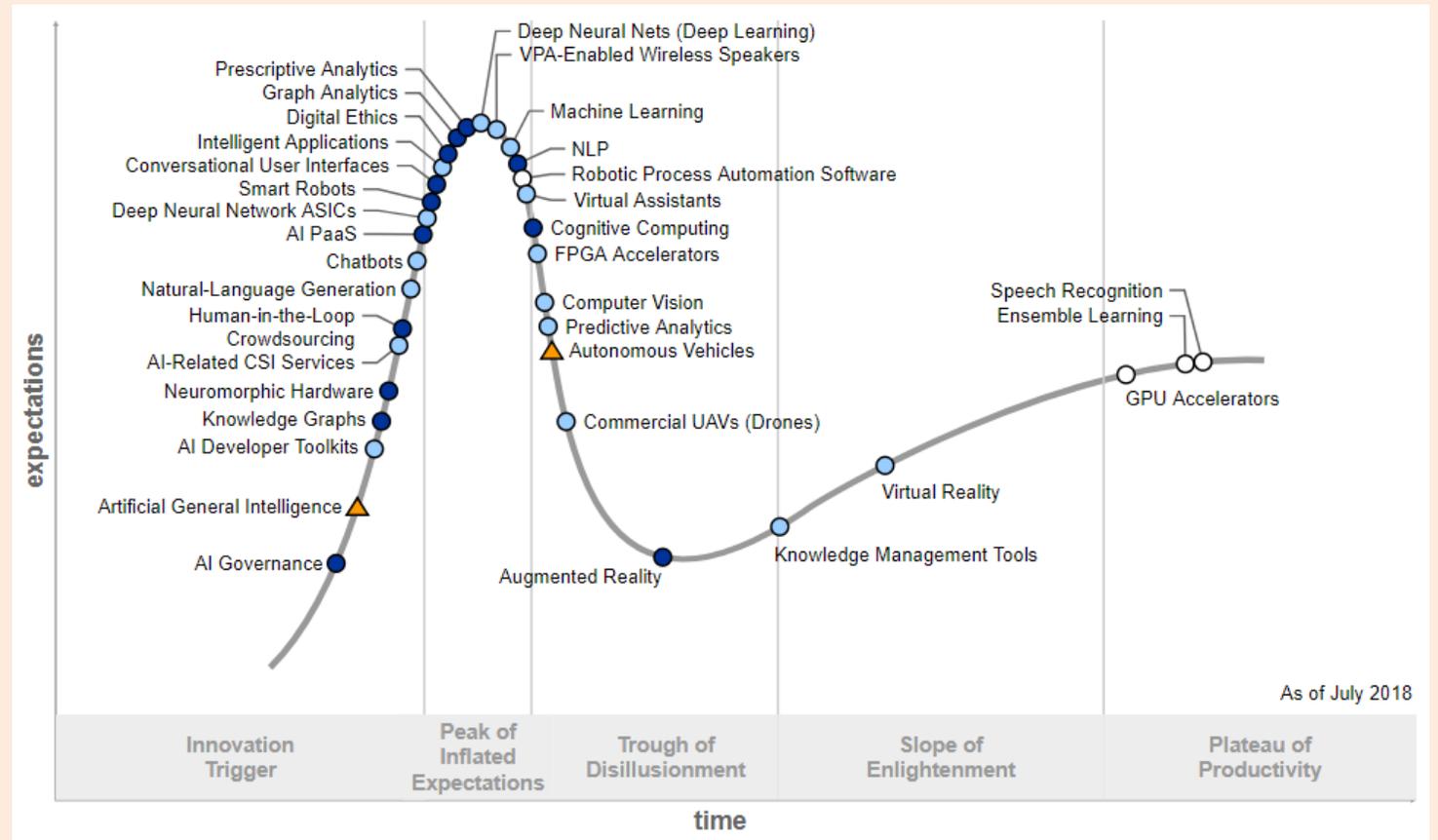


$$\begin{array}{l} 2 > -3 \\ 0.999... = 1 \\ \pi \approx 3.14 \\ \sqrt{2} \\ 5^2 \\ (1 - 2) + 3 \\ 101_2 = 5_{10} \end{array}$$



# What is AI?

## AI technologies



# Terminology

## Machine / Deep Learning

Data processing and 'learning' based on input processing

## Neural Networks

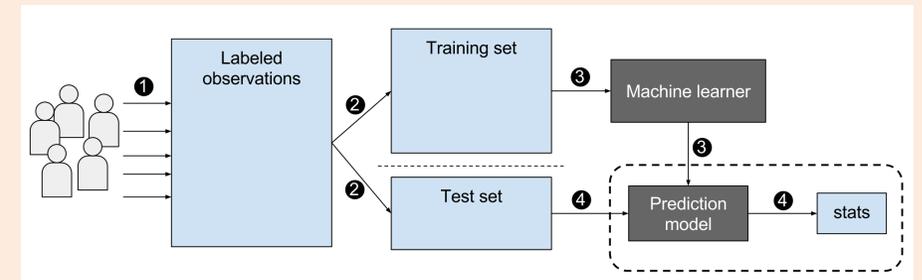
A node or Neuron based approach for processing data with ML

## Decision Support System

A system that recommends an action as an augmentation

## Chatbot

A conversational UI that makes use of intents to funnel users to entities



# General uses

Machine / Deep Learning

Data processing & Analysis

Pattern Recognition

Searching & Indexing

*Examples*

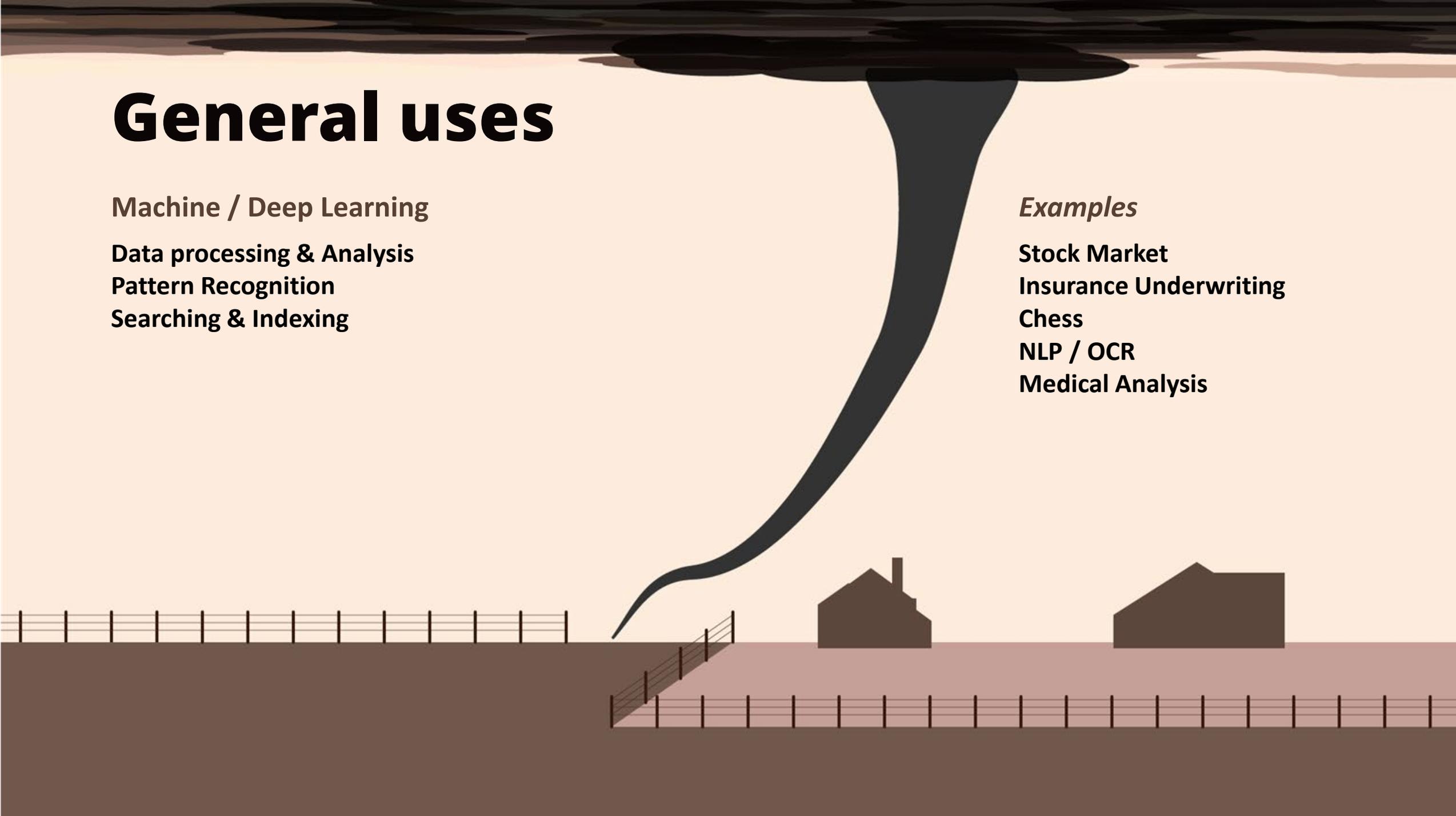
Stock Market

Insurance Underwriting

Chess

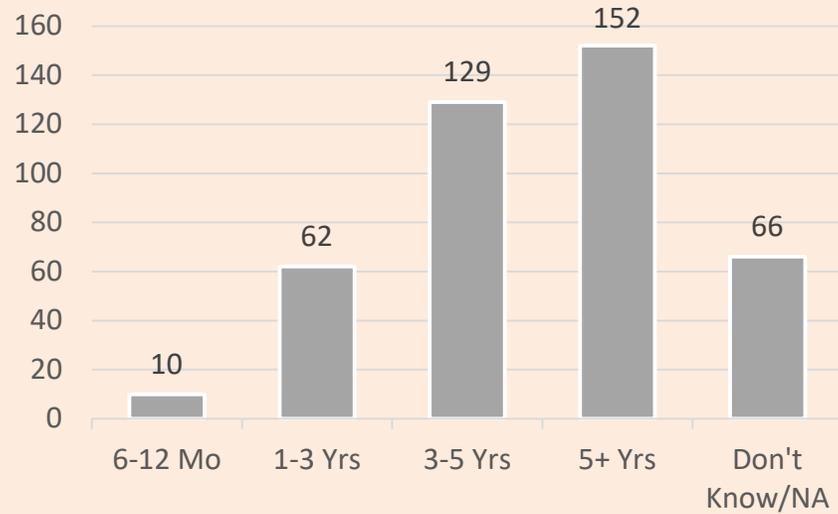
NLP / OCR

Medical Analysis

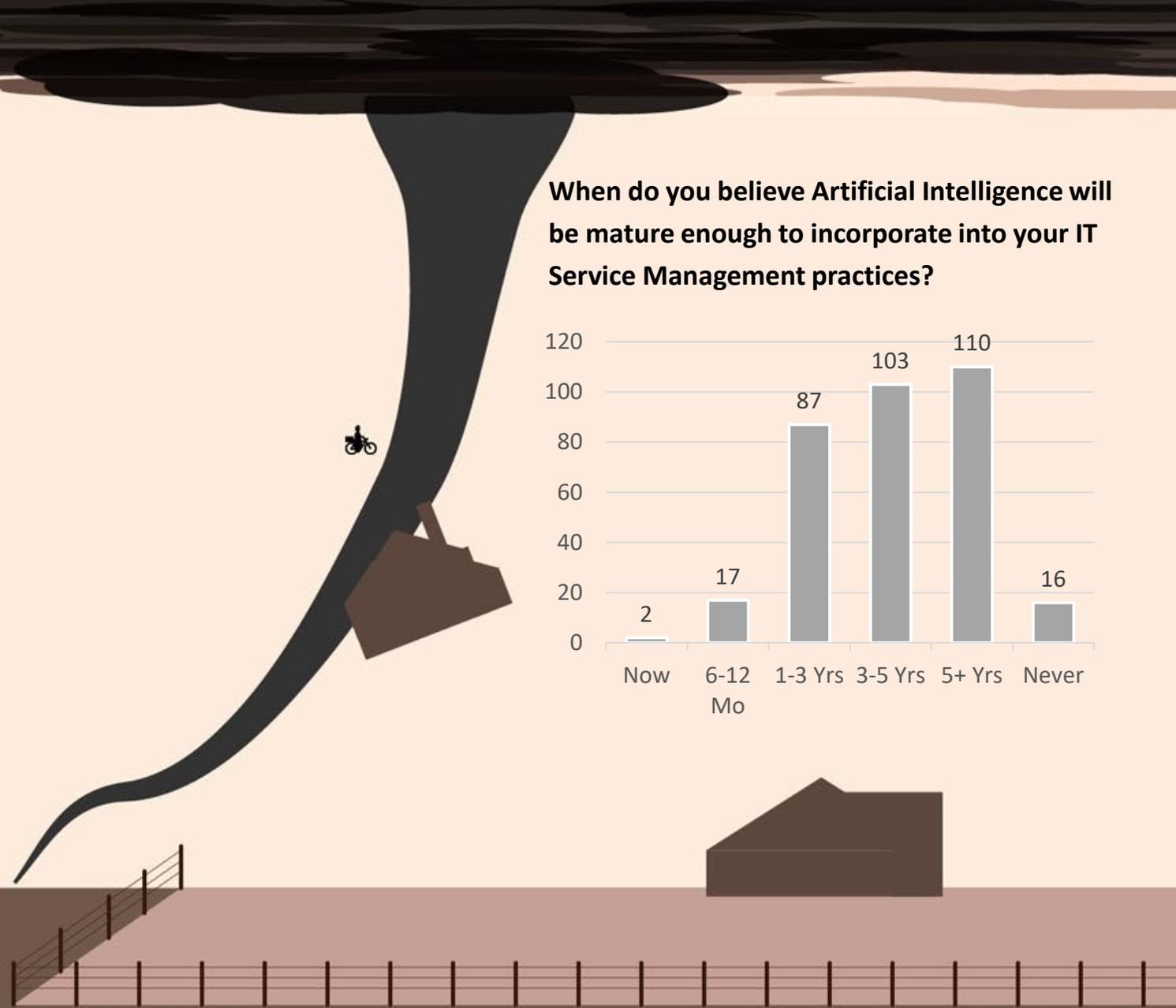
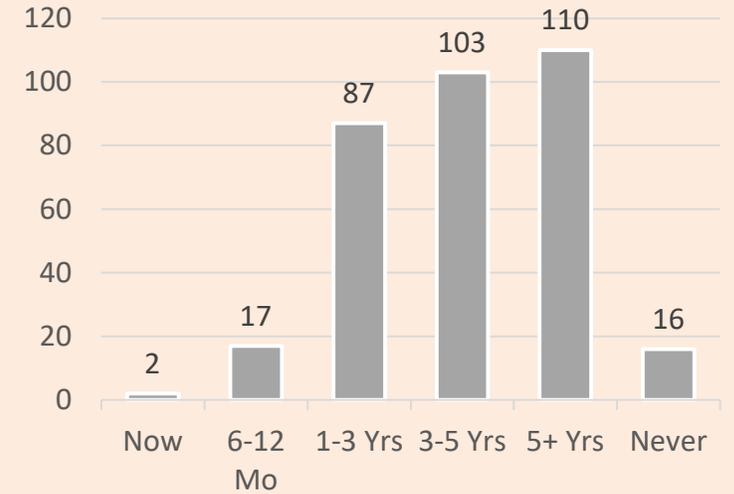


# Adoption

When do you believe the majority of IT organizations will be mature enough to embrace Artificial Intelligence?



When do you believe Artificial Intelligence will be mature enough to incorporate into your IT Service Management practices?





Section 2

# AI in ITSM

# AI in ITSM

## End-Users

Intelligent Search  
Multi-channel Bots  
& Virtual Agents

## Technical / Agent

Intelligent Search  
Auto Classification & Assignment  
Auto Triage & Remediation

## Process Owners & Managers

Continual Service Improvement via  
Pattern matching  
Proactive Problem management  
Improved Change management  
Other Analytics such as surveys



# Technical Agent

## Intelligent Search

Similar to the end users; Finding the right KAs or KCS approach.

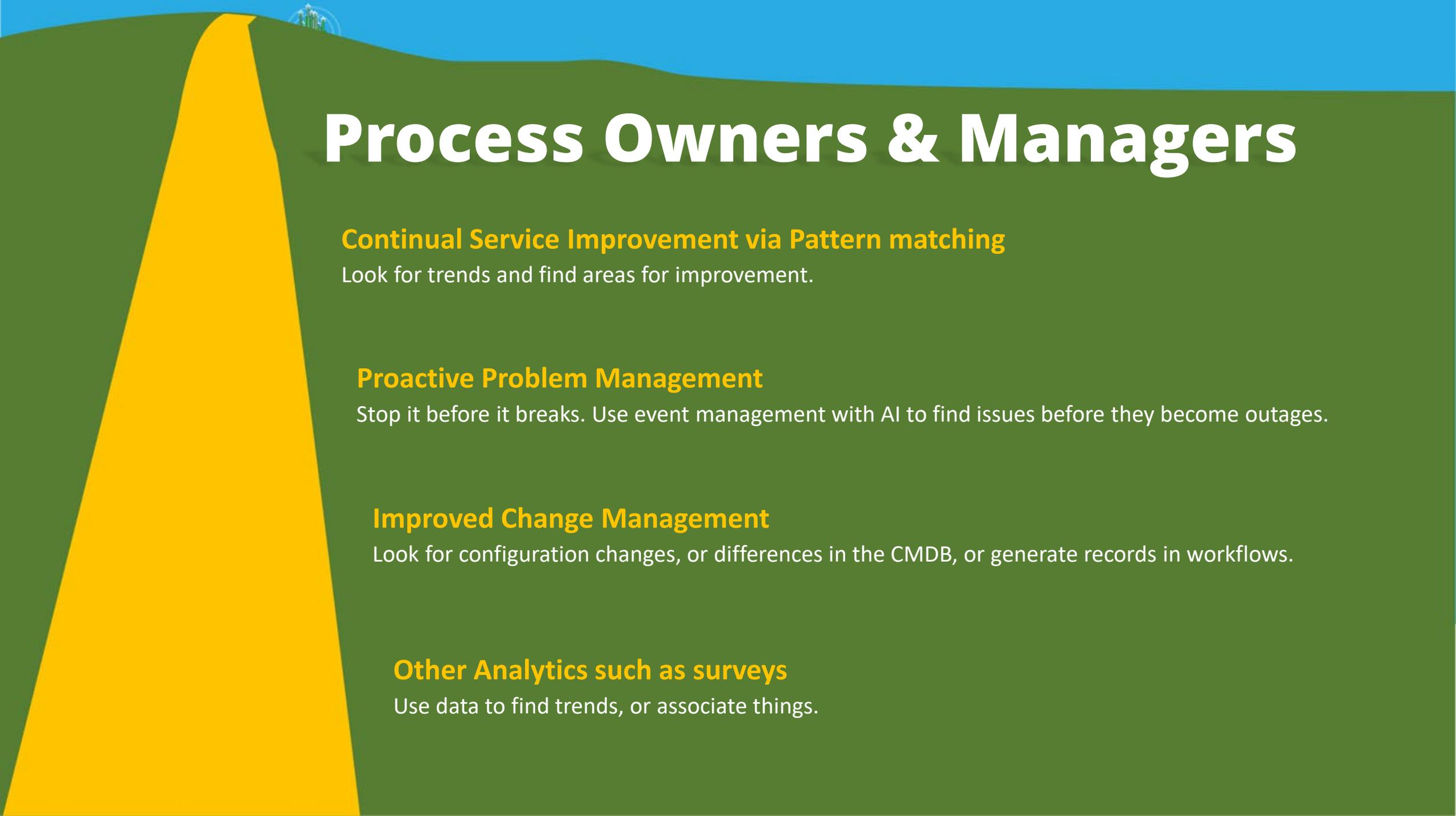
## Auto Classification & Assignment

Using Historic Data, suggesting which service is being requested, and who may be best to work on it.

## Auto Triage & Remediation

If you know the issue, point it out!

Also helpful for “advanced spellcheck”-like features.



# Process Owners & Managers

## Continual Service Improvement via Pattern matching

Look for trends and find areas for improvement.

## Proactive Problem Management

Stop it before it breaks. Use event management with AI to find issues before they become outages.

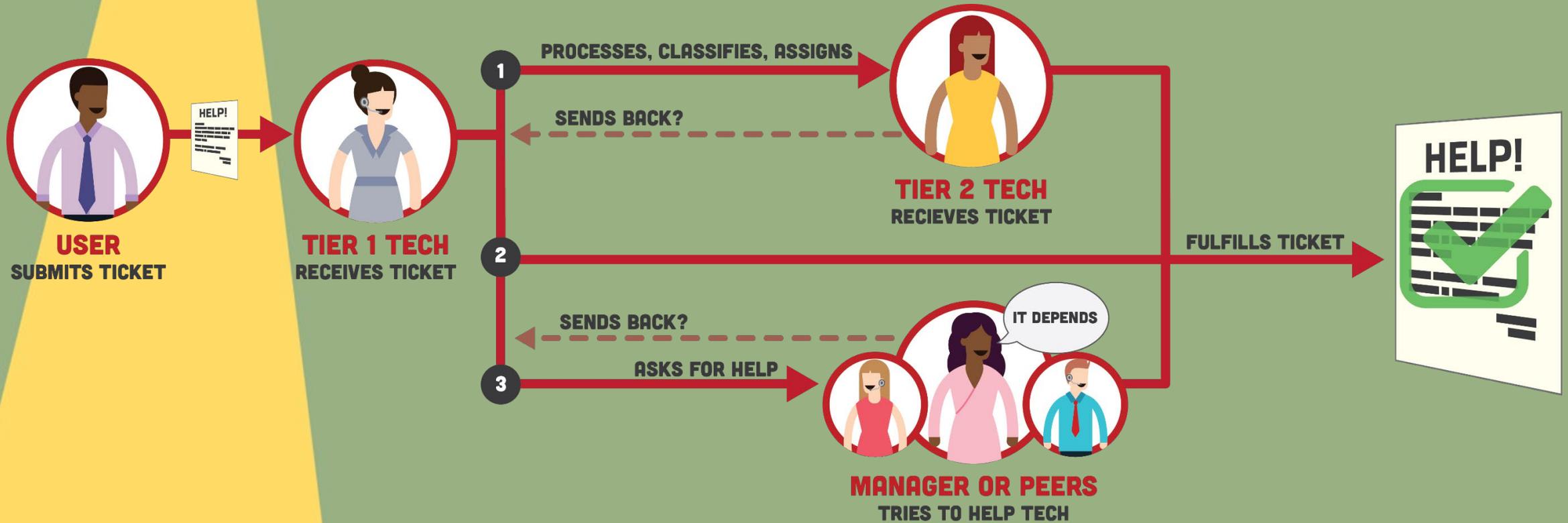
## Improved Change Management

Look for configuration changes, or differences in the CMDB, or generate records in workflows.

## Other Analytics such as surveys

Use data to find trends, or associate things.

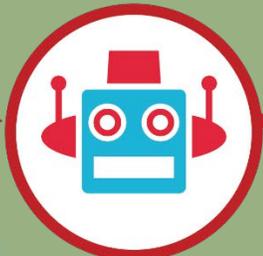
# Ticket Processing



# Ticket Processing



**USER**  
SUBMITS TICKET



**SYSTEM**  
PROCESSES TICKET

RECOMMENDS  
CLASSIFICATION,  
ASSIGNMENT

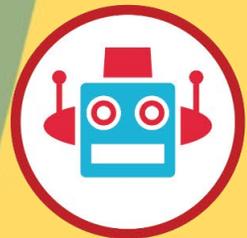


**TIER 1 TECH**  
CONFIRMS RECOMMENDATION

(OPTIONAL: DSS VS AUTOMATION)



**TIER N TECH**  
RECIEVES TICKET



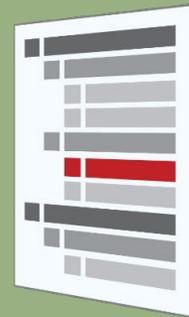
**TICKET**

KEYWORD  
EXTRACTION  
MACHINE LEARNING



**KEYWORDS**

CLASSIFICATION  
OPTIMIZATION



**SERVICE**  
REQUIRES  
SKILLS, TIME TO COMPLETE

ASSIGNMENT  
OPTIMIZATION



**TECHNICIANS**  
HAVE  
SKILLS, COST, AVAILABILITY

# Ticket Processing

Incident 274254

## Requestor

Requestor:   

Employee Type: Administrative - Full Time

Affiliation: Staff

Department: INFORMATION TECHNOLOGY

Manager: Brown, Robert A.

Phone:

Alt Phone:

E-mail:

Alt Email:

Submitted By:   

Open Tickets: **0**

## Status: New

[Next: Begin Work](#)  
[Quick Close](#)

## Owned By

Team: [Help Desk](#)  
User: [not yet assigned](#)

Create Date: 9/18/2018 12:29 PM By: Chris Chagnon  
[- not yet recorded -](#)

[Details](#) [Classify](#) [Investigate](#) [Resolve](#) [Closed](#)

## 1: Details

Summary:  

My laptop is overheating and shuts down by itself



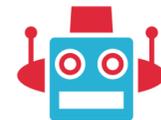
## 2: Classification

[Clear Classification](#)

Service:  

Category:  

SubCategory:  



### My best guess for this ticket:

Service: Computers Devices, and Printing  
Category: Computers and Laptops  
SubCategory: Hardware Problems  
Team: Desktop Services

[Not Correct](#) [I Agree](#)

## 3: Details

Source:  

Priority:   Impact:  Urgency:

Location:  

Building:   Room:

## 4: Specifics

**This Service has an Associated Specifics Tab**

## I Want To

[Assign to individual](#)

[Assign to team](#)

# Ticket Processing

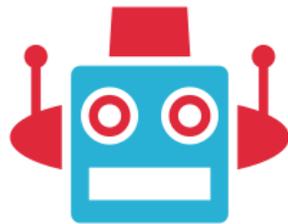
## 2: Classification

[Clear Classification](#)

Service: Auto Generated

Category: Auto Generated

SubCategory: Auto Generated



### My best guess for this ticket:

**Service:** Computers Devices, and Printing

**Category:** Computers and Laptops

**SubCategory:** Hardware Problems

**Team:** Desktop Services

[Not Correct](#) [I Agree](#)

# Chatbots

The screenshot shows a web browser window with the title "Worcester Polytechnic Institute" and subtitle "Information Technology Services". The chatbot interface includes a sidebar with navigation icons (home, documents, lists, download, location, calendar, settings, refresh) and a main chat area. The chat history shows the following messages:

- Robot: Hello Christopher Chagnon!
- User: You are **Christopher Chagnon**, aren't you?
- Robot: Great!
- Robot: It's so nice to meet you Christopher Chagnon. My name's InTRo, and I'm an Information Technology Robot
- Robot: What can I help you with today?

At the bottom, there are two radio button options: "I have an issue" and "I'd like to make a request". Below these is a search bar with the placeholder text "Type to filter ..." and an upward arrow icon.



Section 3

# Getting Started



# Workflows and Automation

## The Ones You Probably Own

Automating your workflows is an simple application of AI.

Smart workflows that replace manual processes area good investment.

Threshold-based automations and actions

Tiered Alerts based on CI events and state changes



# Quick Wins

## Don't Reinvent The Wheel

If you don't have internal resources for this, use a tool!

Cloud tools such as IBM BlueMix, Microsoft Azure, Amazon Web Services, provide many AI capabilities through their platforms.

Open Source Projects on places like Github may be helpful.

Check to see what you already may own

## Start Small

Don't be afraid to test the waters with existing data, or do a trial run.

There is no need to implement everything on day 1.

# Starter Projects

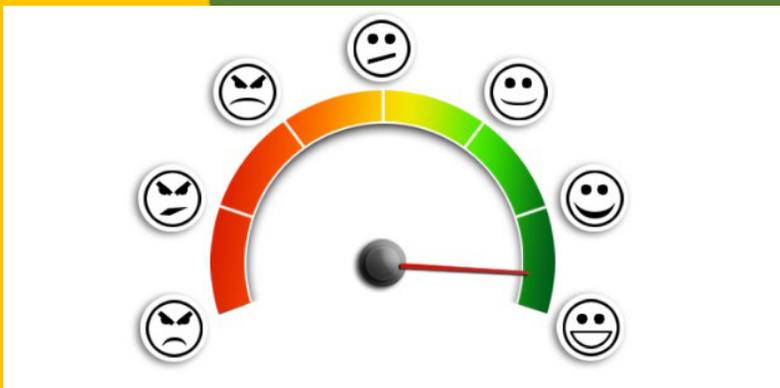
## Workflow Automation (IF This Then That)

Find processes that you do repeatedly and digitize / automate them.

*EX: Email Workflows, Telephony Integrations, Approvals*

## Sentiment Analysis & Language Processing

What is someone saying, how are they feeling.



## Chatbots

Use an online system, play around for an hour or two

## Personalization and Awareness

Use the data that is available to you to inform more about what is going on.

*EX: Location, hostname or IP, Active Cookies, etc.*

Worcester Polytechnic Institute  
Information Technology Services

Services Software Spaces Utilities Help

## Find Your Hostname on Windows

How to find your hostname on a Windows computer.



Looking for your Hostname?

Our best guess is that the hostname of the computer you are using is:

its21

Logged In

1 Click the Start menu button



Section 4

# The Future

# The Future

## What's Next in AI?

More Accessible (and Cheaper) Tools.

Faster Processing of data.

Better quality and “believability” of tools.

Internet of Things and Robots (The friendly ones)



# The Future

## Shaping AI's Future

Get involved in projects that interest you.

Support Research in Academia or industry

Educate and Inform your peers, employees, and higher ups.

Provide feedback to vendors / platforms you use.

Innovate and try new things.





**Thank  
You!**