

Wanted Dead or Alive:

ITSM in the Age of Evolving Technologies



John Carter

City of Ottawa



Presentation Agenda

AGENDA

- **About the presenter**
- **About the City of Ottawa**
- **Our ITSM journey**
- **Presentation Overview**
- **10 Technology Trends**
 - **What they are and why they are important to ITSM**
 - **A tip for each trend**

About the Presenter

- Over 20 years experience in the IT industry
- 7 years leading the ITSM practice at the City of Ottawa
- Acted as Change Manager for 5+ years, approving nearly 5000 changes
- Previously presented at many itSMF, HDI, Pink Elephant, and vendor conferences/events
- Previous presentations at this event:

2017

**TAKING THE IT
OUT OF ITSM**



2018

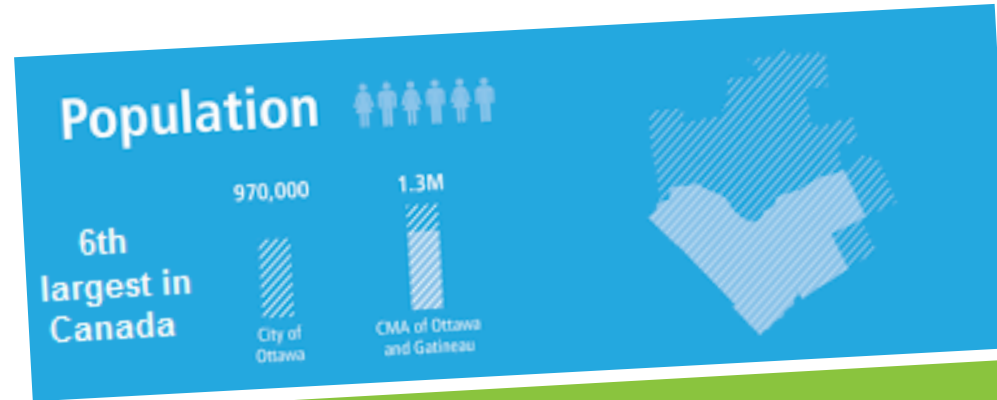
**Unleash
the Beast!**



**10 Tips to Uncover the Full Breadth of Functionality
in Your Service Management Tool**



My Organization – City of Ottawa



17,000 Clients

Over 100 lines of business

400 different locations

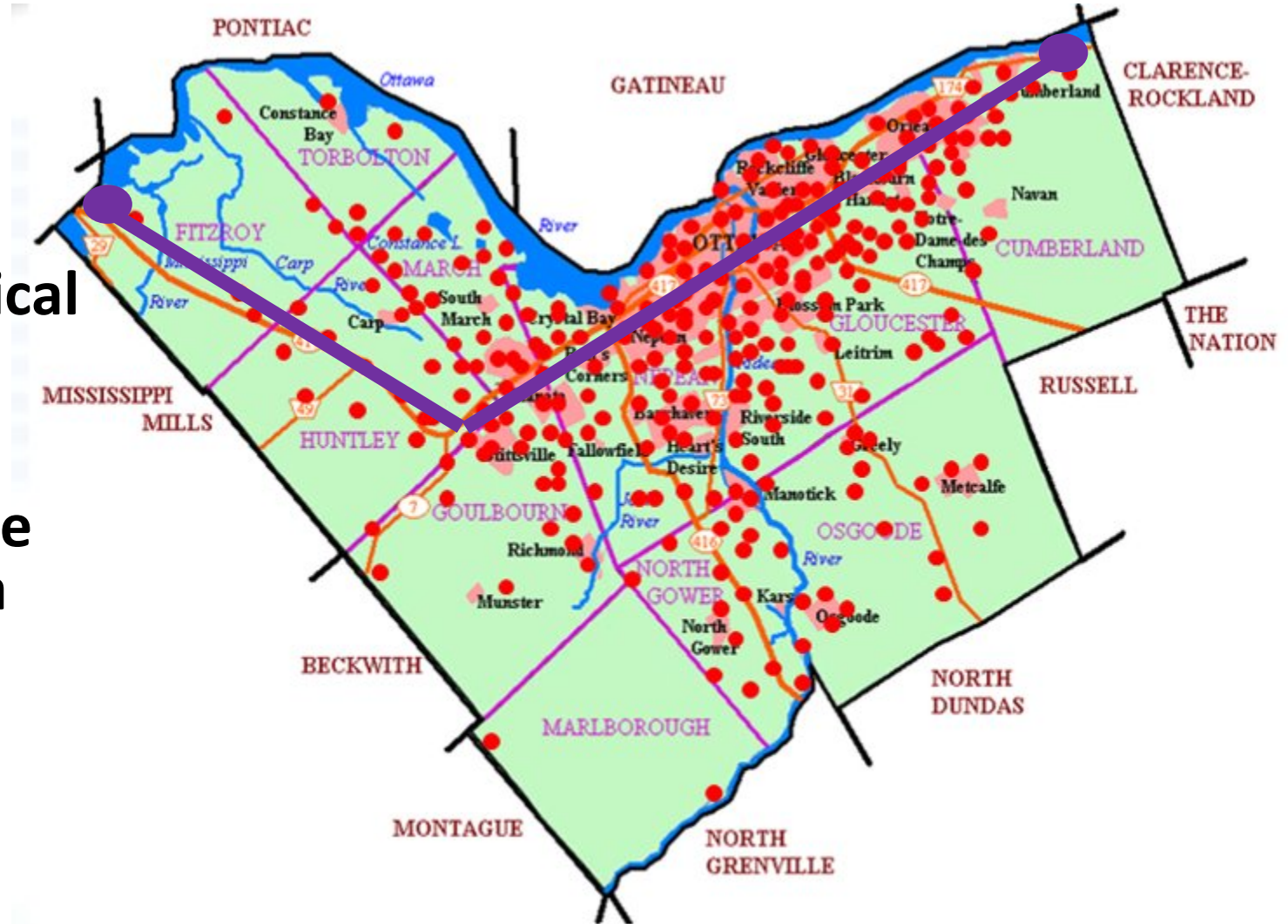
300 full-time ITS staff



My Organization – City of Ottawa

With over 400 sites to support, the need for service management processes becomes critical for City of Ottawa ITS

75 minute highway drive between City of Ottawa sites



Our Service Management Journey



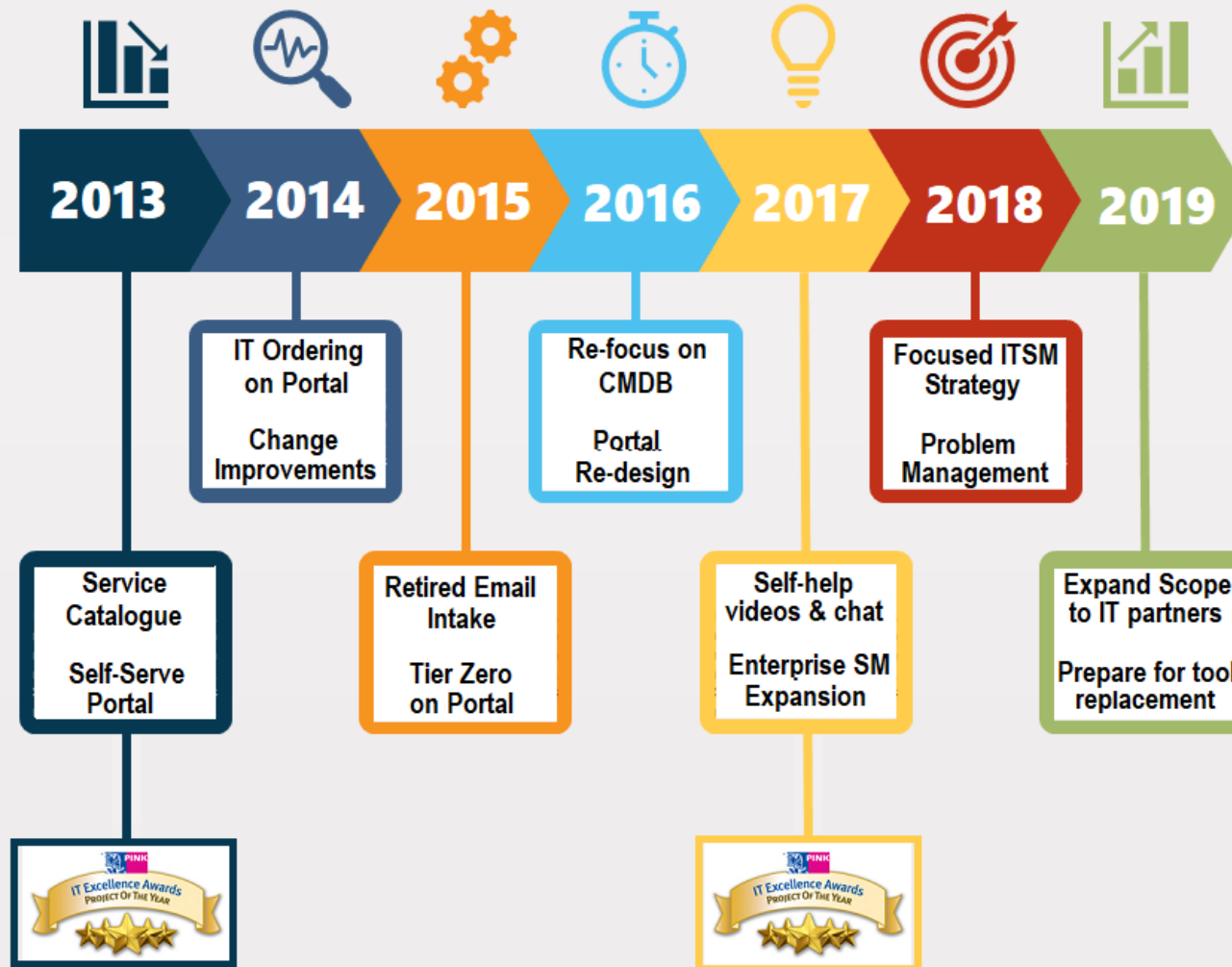
- **Marval Service Management**
 - **City of Ottawa has been a client for 12 years**

- **Fits the need for ITS and for Non-IT clients**



Our Service Management Journey

City of Ottawa ITSM Timeline



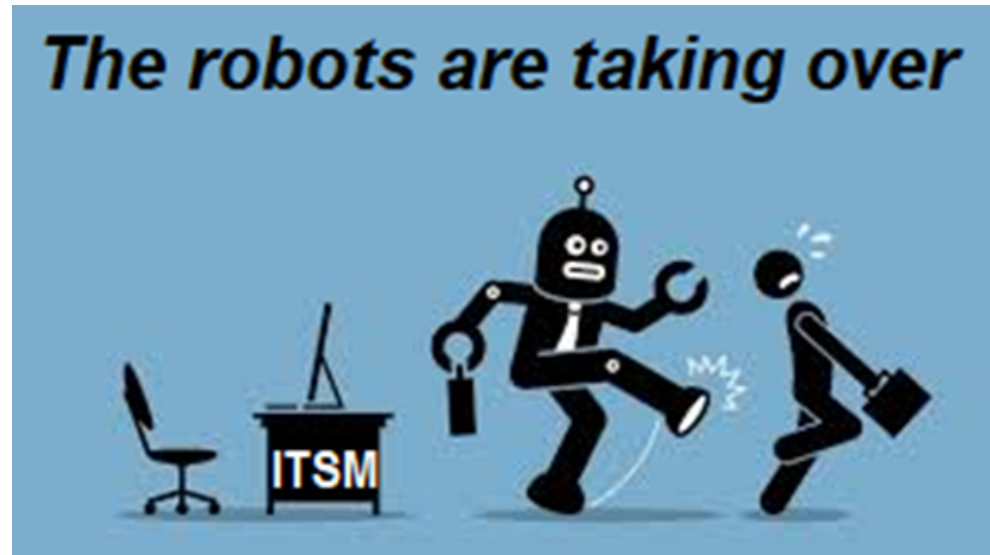
Presentation Overview



Presentation Overview



Presentation Overview



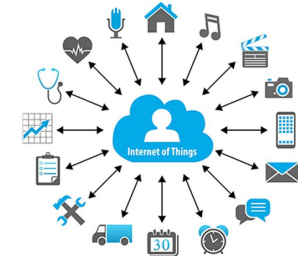
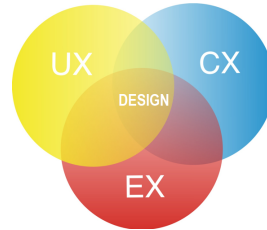
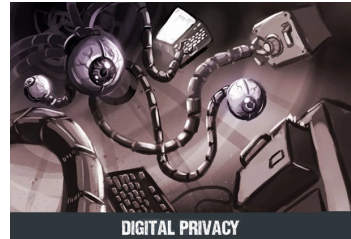
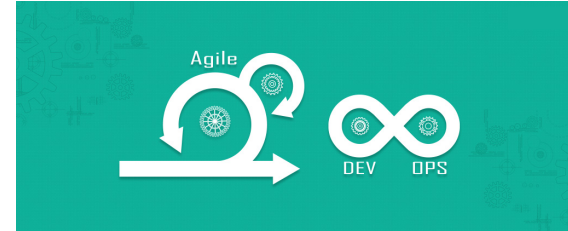
Presentation Overview



"To benefit from trends such as automation, cloud computing, DevOps, and big data, infrastructure and operations professionals need (ITSM processes) more than ever."

***- Glenn O'Donnell
Forrester Research***

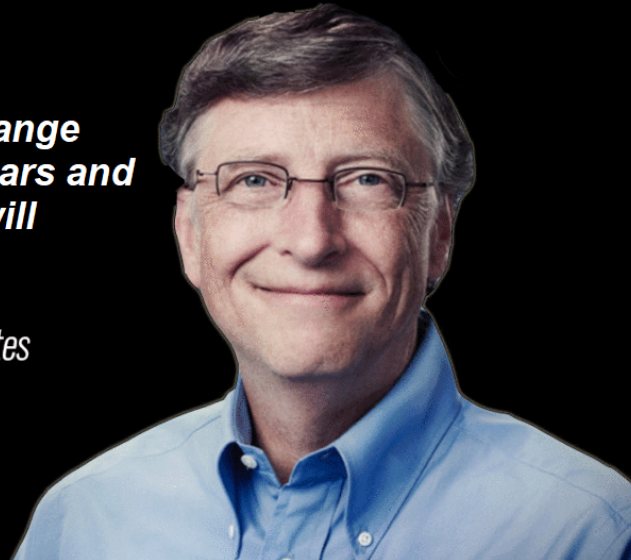
Age of Evolving Technologies



We've already over-reacted, but let's not also under-react...

"We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten."

- Bill Gates





Ten Tips For 10 Trends



TOP 10 TRENDS

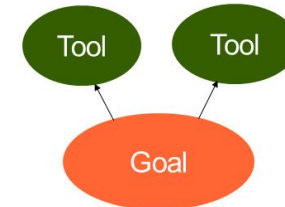


ITSM TIPS



EXPERIENCE-BASED

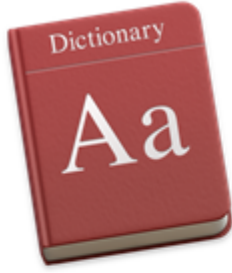
Tool Agnostic



Artificial Intelligence



Artificial Intelligence



The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Service Catalogue Management



Knowledge Management



Artificial Intelligence

Traditional Service Desk

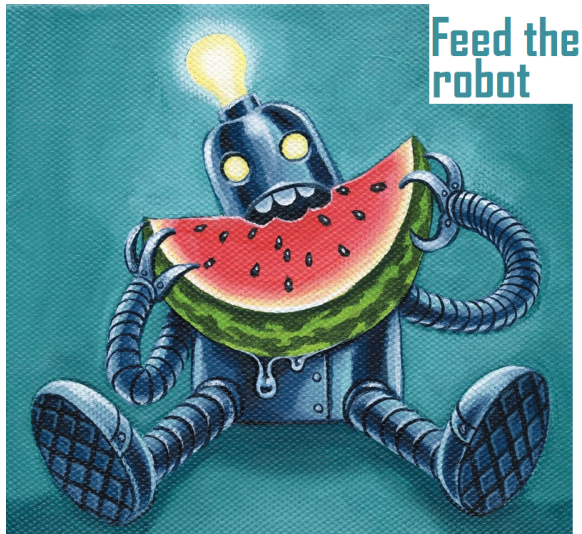


Virtual Support Agent



Artificial Intelligence

Get serious about Knowledge Management



AI needs knowledge in order to make decisions based on your business

..... KNOWLEDGE MANAGEMENT

**How mature is your KM?
If it needs improvement,
you can incrementally
get there leveraging a CSI
approach**

Artificial Intelligence

Get serious about Knowledge Management

SRQ-1576843

Additional

Request Source: Phone

Spoke To:

Location: Elgin, 180 -> Floor 6 -> WS 21022 -

Customer: Transportation Services

Contact: Carter, John

Telephone: 613-580-2424

Details Advanced Attachments Related **Classification** Approvals

SAP

Resolution: Advice Given

Select Font: Select Font Size: B I U x² x₂

Evelyn needed assistance installing the NetScaler VPN. she was not connected to the network at the time of the call. advised that she called back when she has a connection.

Notes Check List Sub Requests

Sort Date: Descending

Private Public Audit

Private 09/18/2019 15:14:39 Echegini, Ngozi

Evelyn needed assistance installing the NetScaler VPN. she was not connected to the network at the time of the call. advised that she called back when she has a connection.

- For every Service Request and Incident logged, require that a “Knowledge Article Available” field be tracked
- Allows for a continual service improvement approach for KM
- Improvement inherently comes first for the high volume request
- Leverage reporting tool for measured improvement

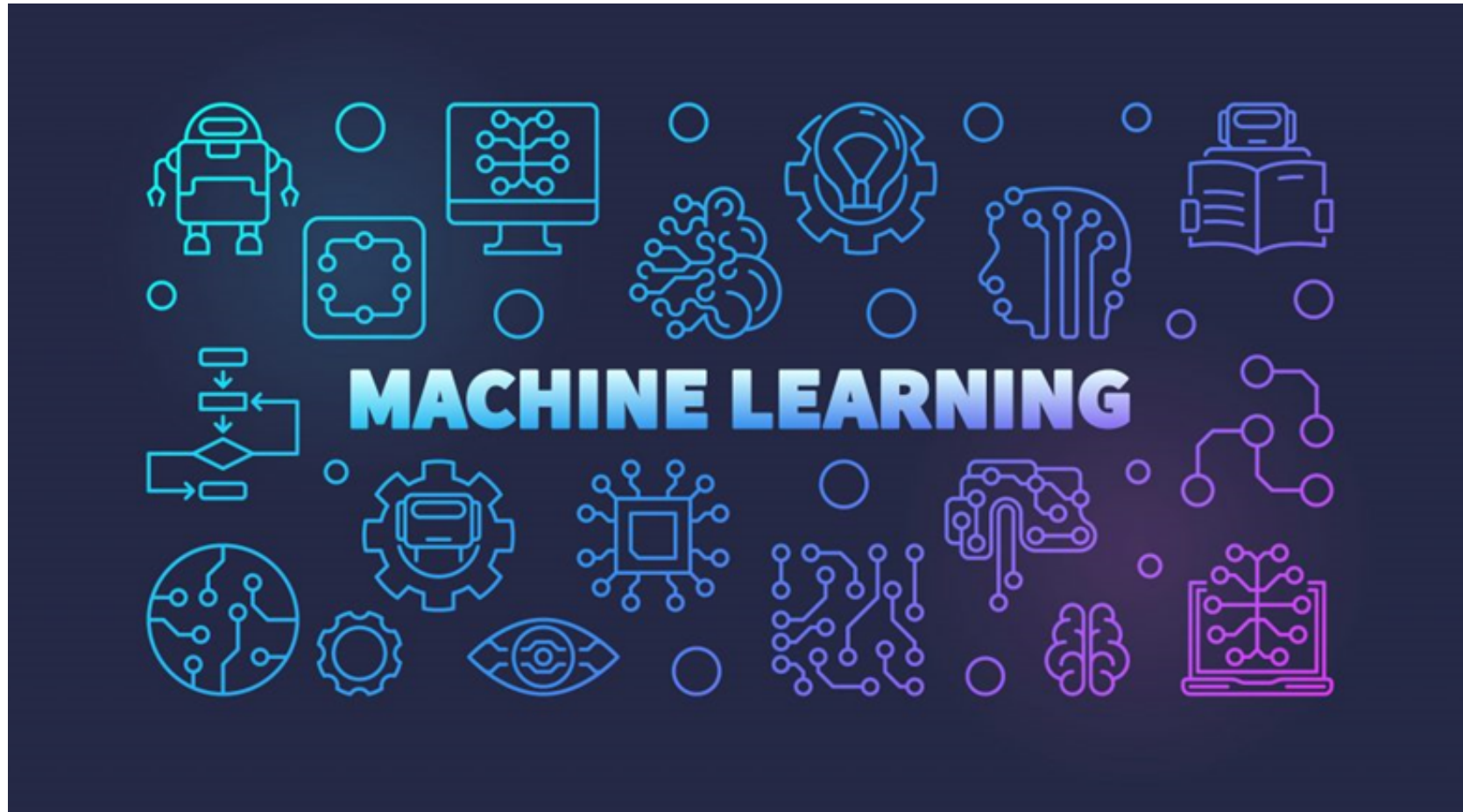
Artificial Intelligence



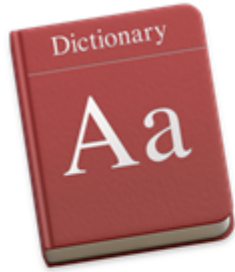
Tip
#1

Start with incremental change to Tier Zero support and Knowledge Management

Machine Learning



Machine Learning



The scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead.

Event Management



Service Level Management



Machine Learning

Are you smarter than a robot?

*Chihuahua or
blueberry muffin?*



*Donald Trump or
raw chicken?*



*Pouting pose or
baboon's butt?*



You can't tell the difference? AI / ML algorithms can tell the difference!

Machine Learning

- Event Management = monitoring and control of IT operations
- An event is a change of state of an IT service or other CI
- Traditional Event Management is *proactive*



- With ML, IT outages can be predicted, and solutions automatically applied or suggested with a high rate of success as the system learns from past experiences
- Automated problem resolution of issues introduced through changes to services
- When the ML engine predicts a problem, it can do root cause analysis before customers are impacted
- ML Event Management is *predictive*

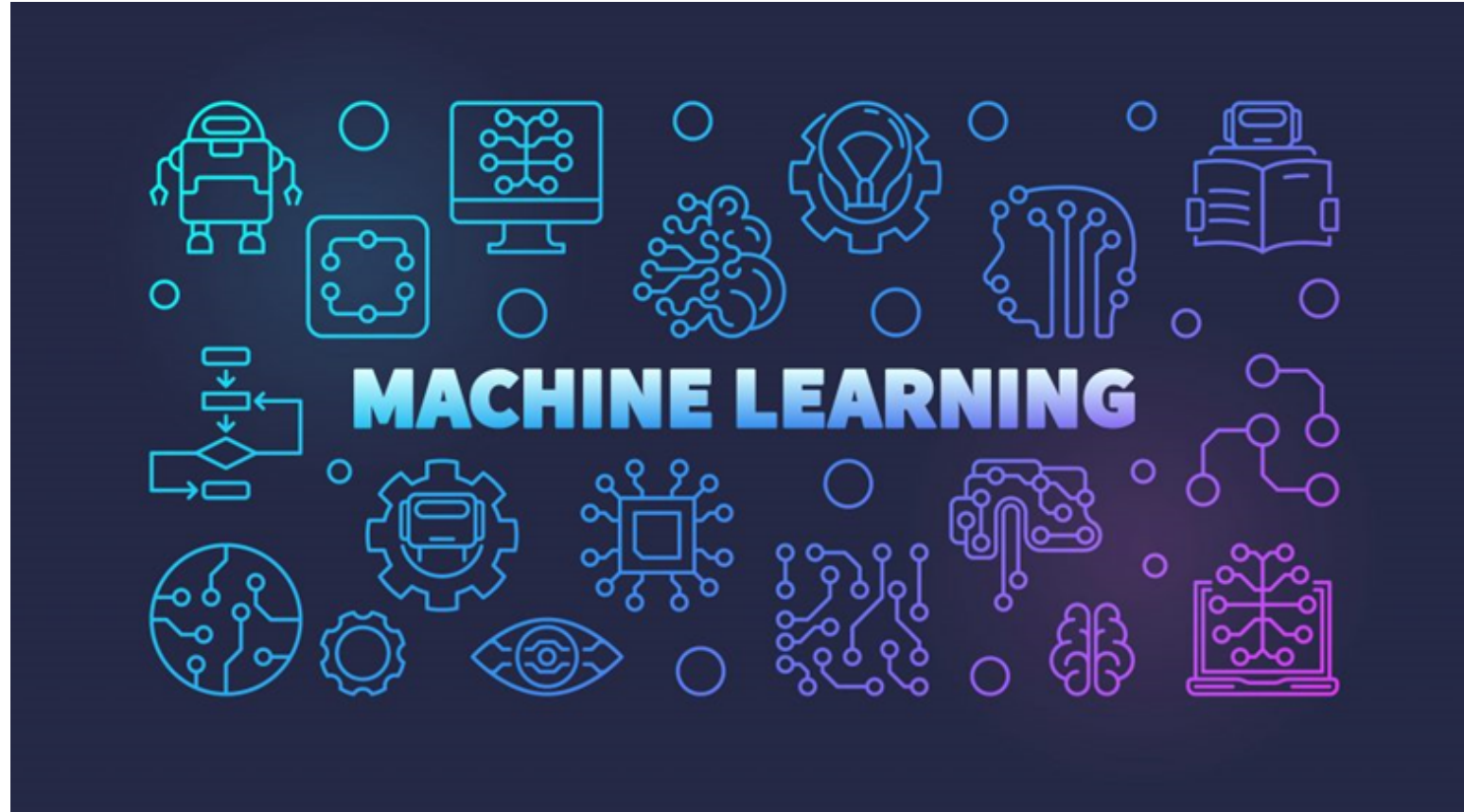
Machine Learning

- Traditional Service Level Management uses a clock to determine the health of request against the associated SLA
- SLA breaches are reported on *reactively*



- With ML, predictive analytics are being used to mine performance data across the IT ecosystem to identify potential problems
- Can provide guidance to users or the IT service desk on alternative approaches for fulfilling a request in order to meet service level agreements
- With ML, SLA breaches *predictive*

Machine Learning



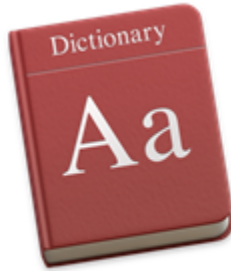
Tip
#2

Look for opportunities, because the robots are smarter than us

Mobile Apps



Mobile Apps



A computer program or software application designed to run on a mobile device such as a phone, tablet, or watch.

Request Fulfillment



Incident Management



Mobile Apps

Mobile platform features

Geo-location



Location of
Site Support Agents

Push notifications



Notify clients of
service availability

SMS Texting



Notify staff and
clients of major
incidents & service
outages

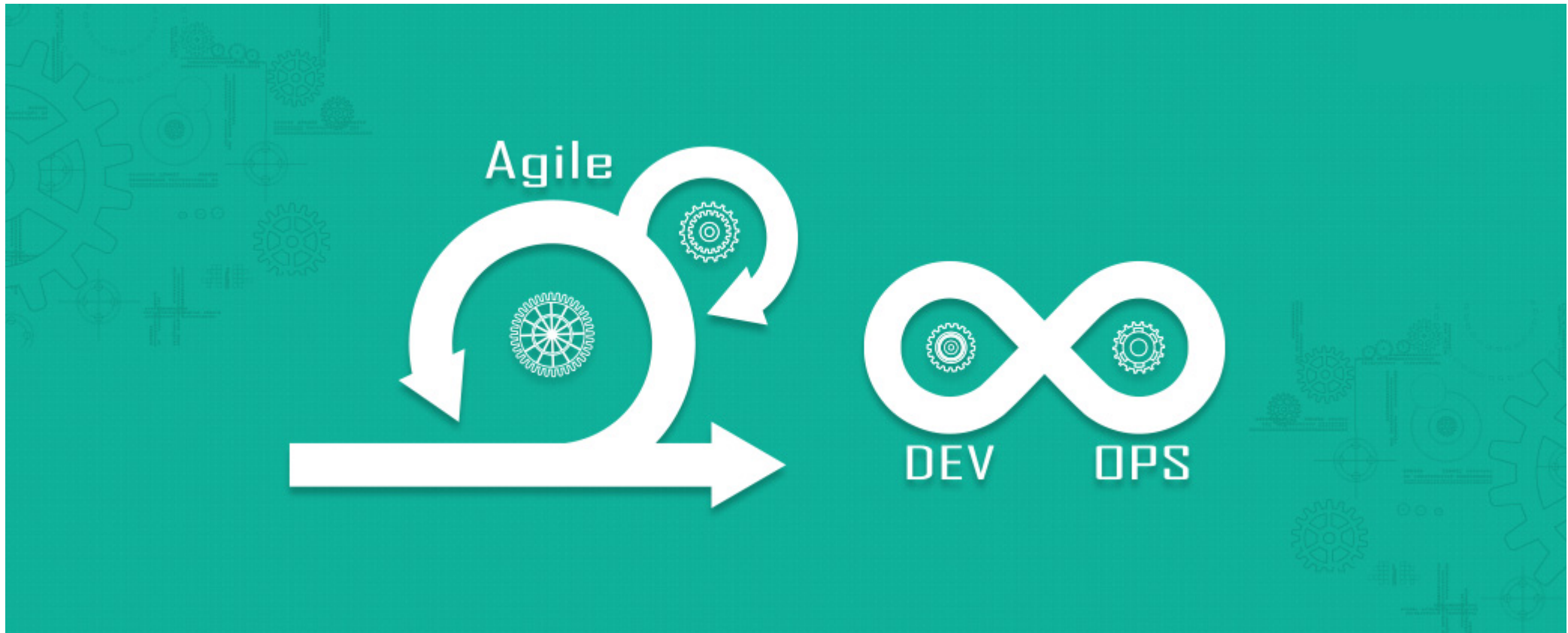
Mobile Apps



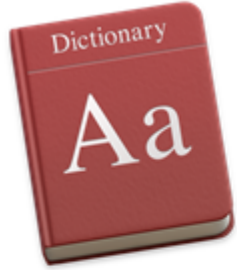
Tip
#3

*Think of features that are unique or useful
from the mobile platform*

DevOps and Agile



DevOps and Agile



DevOps is a set of software development practices that combine Dev and Ops to shorten the development life cycle while delivering updates frequently. Agile software development is an approach under which requirements and solutions evolve through collaboration between self-organizing and cross-functional teams.

Change Management



Release & Deployment



DevOps and Agile

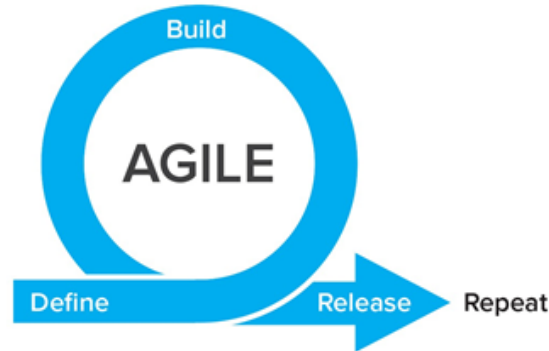
- DevOps teams focus on being **autonomous**, and leveraging **automation**
- The desire to be **autonomous** results in not wanting to be dependent on other teams or processes
- The desire to leverage **automation** results in a need for speed in the build/test/release/deploy cycle



In order to support a DevOps operating model, an ITSM program must maximize the number of standard changes and simplify their release process

DevOps and Agile

- Agile teams focus on *continuous delivery* and maintaining a *constant pace*
- The desire for executing *continuous delivery* results in not wanting to be dependent on other teams or processes
- The desire to maintain *constant pace* results in a need for speed in the build/test/release/deploy cycle



In order to support an Agile development model, an ITSM program must maximize the number of standard changes and simplify their release process

DevOps and Agile

City of Ottawa - Standard Changes

We have pre-approved the standard operating procedure for 40 different changes types for common, low risk, repeatable tasks

REQUEST FOR CHANGE (RFC) FORM

Home

Calendar

PRE-AUTHORIZED CHANGE

User: CARTERJO

A Pre-Authorized Change has a very low risk and impact, is relatively common, and follows a Standard Operating Procedure (SOP). This change does not follow an approval workflow at the time of the change because the SOP being followed has been previously approved by the Change Advisory Board (CAB) and the Change Manager.

Step 1: SOP Form

SOP:

NEO - Windows Server Patching - PCI Secure Zone

Please follow standard operating procedure (SOP):

https://cueap07.city.a.ottawa.ca/bimsp/idcplg?IdcService=GET_FILE&dDocName=ERMPROD_517854&RevisionSelectionMethod=LatestReleased

Day of change / Patching day

2019-Sep-30 12:00

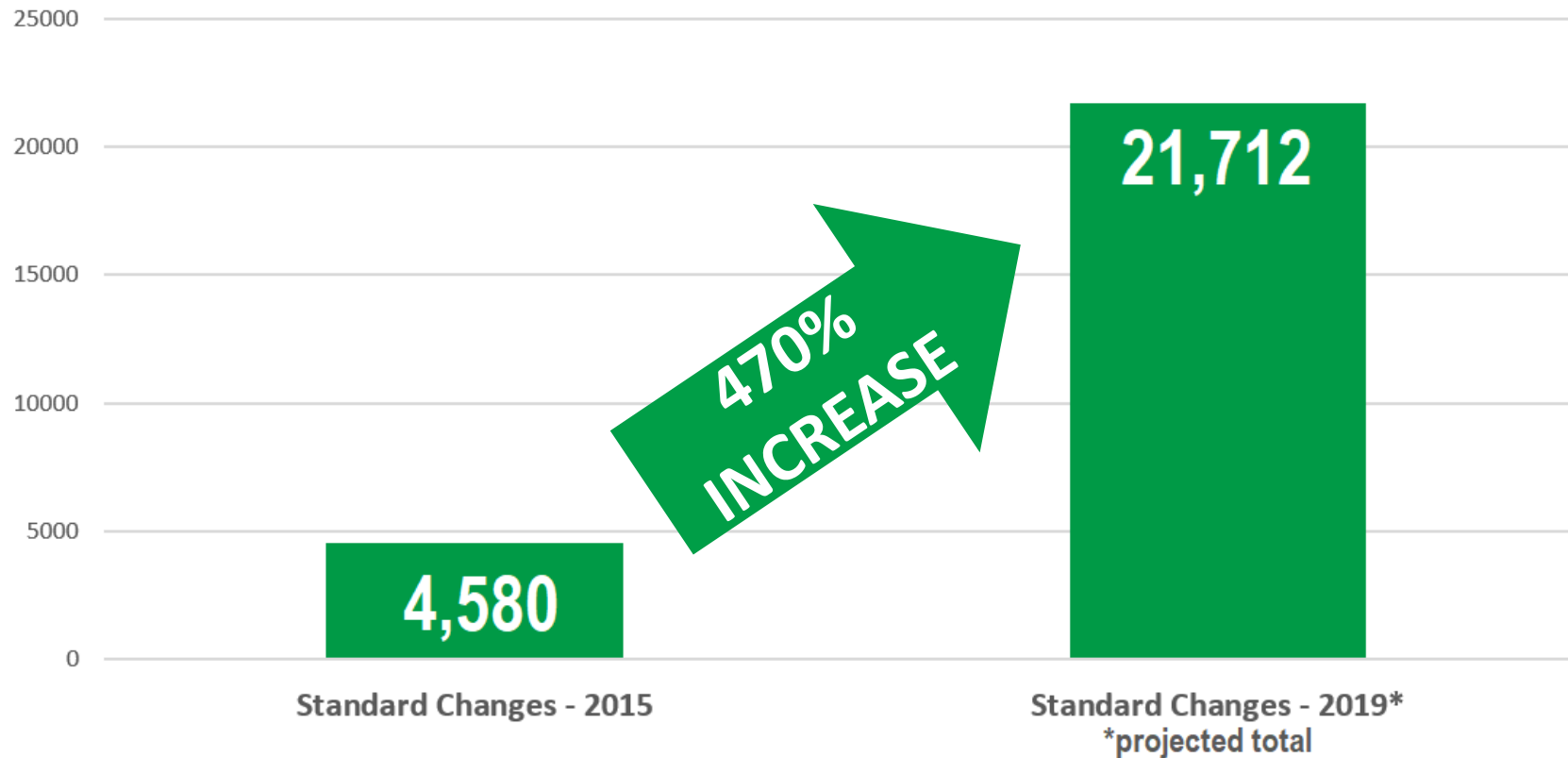
Server being Patched

COO-5027 - CMAP060 (Physical Server) (In PCI)

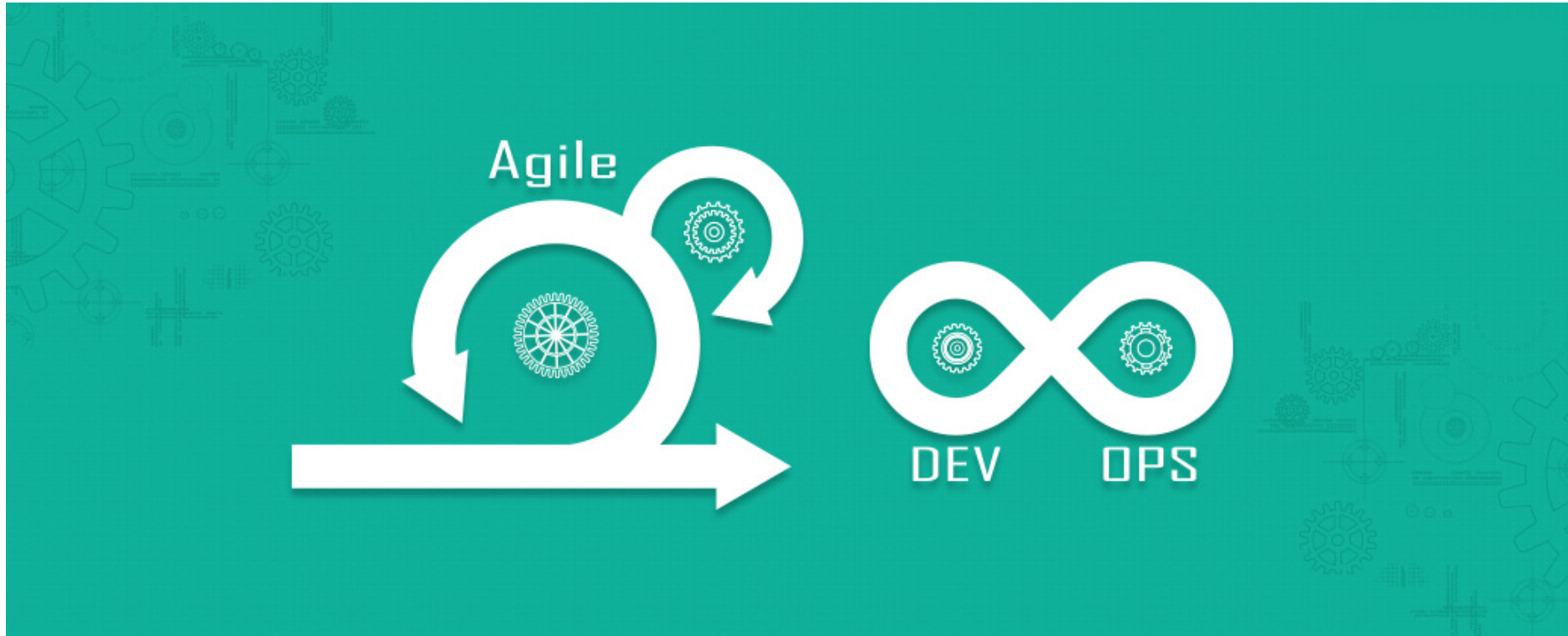
Submit

DevOps and Agile

City of Ottawa - Standard Changes By Year



DevOps and Agile



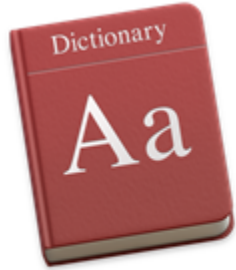
Tip
#4

*Simplify your change & release processes,
and increase your standard change volume*

Cloud Computing



Cloud Computing



The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

Configuration Management



Change Management



Cloud Computing

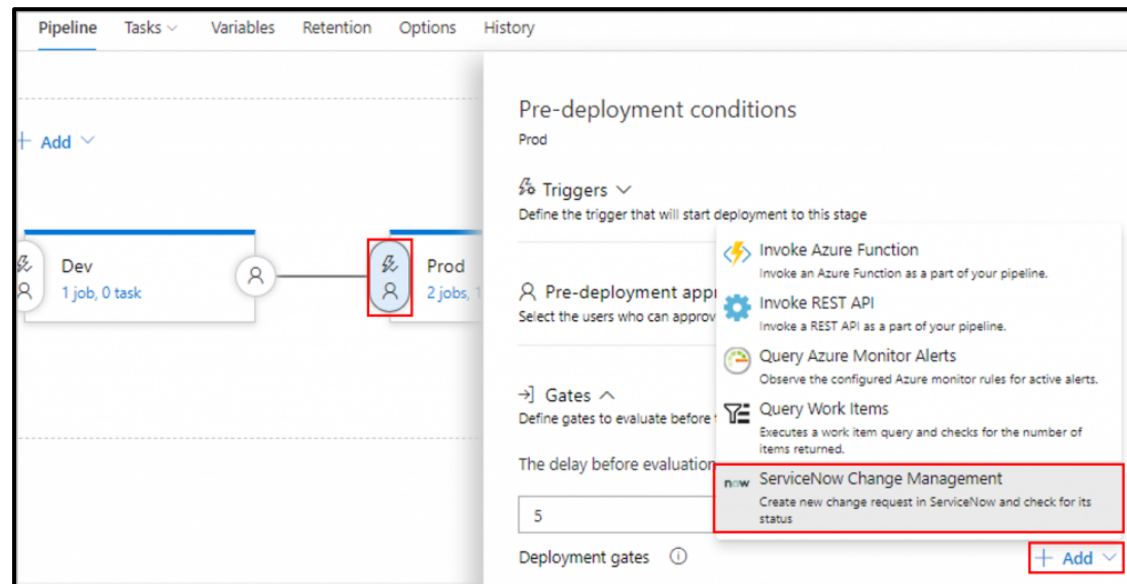
- Whether it's a third party SaaS provider or your own managed cloud data center, there is the impression that proper Configuration Management and Change Management processes are not being followed



- Ensure that you treat your cloud environment like you would an on-premise data center
- As a starting point, manage all IaaS, SaaS, PaaS resources and services with your on-premise CMDB and follow the existing change process
- Add new CI types and new CI relationship types as required (i.e. Azure Resource Groups)

Cloud Computing

- You can configure the Azure Alert service to auto-update the CMDB whenever a life cycle state or configuration change event occurs for an Azure resource
- Agents can also be installed on your on-prem infrastructure
- To manage change in Azure DevOps, you can add ServiceNow Change Management as a release gate in your pipeline to control the promotion of changes from one stage to another



Cloud Computing

- You can configure the Azure Alert service to auto-update the CMDB whenever a state or configuration change event occurs for an Azure resource
- Agents can also be installed on your on-prem infrastructure
- Don't be afraid to **improve** change process with new features available

To manage change in Azure DevOps, you can add ServiceNow Change Management as a release gate in your pipeline to control the promotion of changes from one stage to another

The screenshot shows the Azure DevOps pipeline editor. On the left, a pipeline is shown with two stages: 'Dev' (1 job, 0 task) and 'Prod' (2 jobs, 1 task). The 'Prod' stage is highlighted with a red box. On the right, the 'Pre-deployment conditions' panel is open, showing a list of triggers. The 'ServiceNow Change Management' trigger is highlighted with a red box. Below the triggers, there is a section for 'Gates' and a 'The delay before evaluation' field set to 5. At the bottom right, there is a '+ Add' button.

You can integrate Azure's Just-in-Time access to resources with your ServiceNow Change Management to allow only the change initiator access to a resource only during the approved change window

The screenshot shows the 'JIT VM access configuration' window. The title bar is dark blue with the text 'JIT VM access configuration' and 'AZWS201601 - PREVIEW'. Below the title bar, there are buttons for '+ Add', 'Save', and 'Discard'. The main content area is titled 'Configure the ports for which the just in time VM access will be applicable.' and contains a table with the following columns: PORT, PROT..., ALLOWED SOUR..., IP RANGE, and TIME RANGE. The table has four rows of data, each with a 'Recommended' status and a '3 hours' time range.

PORT	PROT...	ALLOWED SOUR...	IP RANGE	TIME RANGE
22 (Recommended)	Any	Per request	N/A	3 hours
3389 (Recommended)	Any	Per request	N/A	3 hours
5985 (Recommended)	Any	Per request	N/A	3 hours
5986 (Recommended)	Any	Per request	N/A	3 hours

Cloud Computing



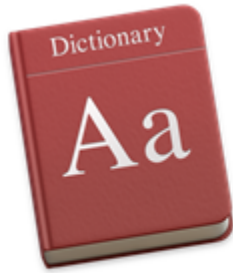
Tip
#5

Establish your on premise processes in the cloud, but use opportunity to improve

SaaS Solutions



SaaS Solutions



A method of software delivery and licensing in which software is accessed online via a subscription, rather than bought and installed on individual computers.

Supplier Management



License Management



SaaS Solutions

- We traditionally think of CIs as technical assets



Technical Assets

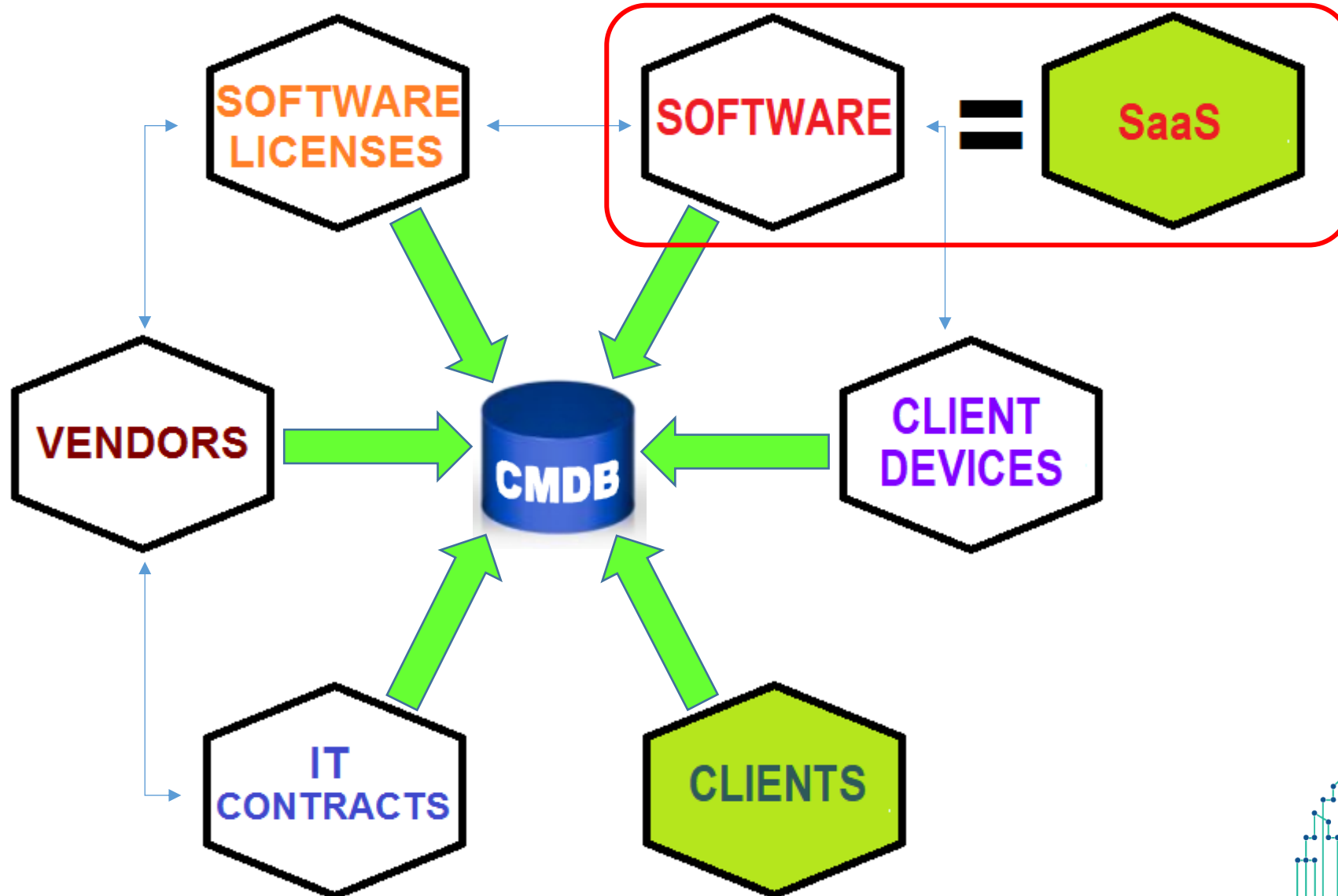
- Think of them as entities / artifacts that have relationships to one another
 - Relationship could be a technical dependency, or a business dependency



- How do I know if an asset could / should be managed in the CMDB?
 - Think about what it means if it were to be removed



SaaS Solutions



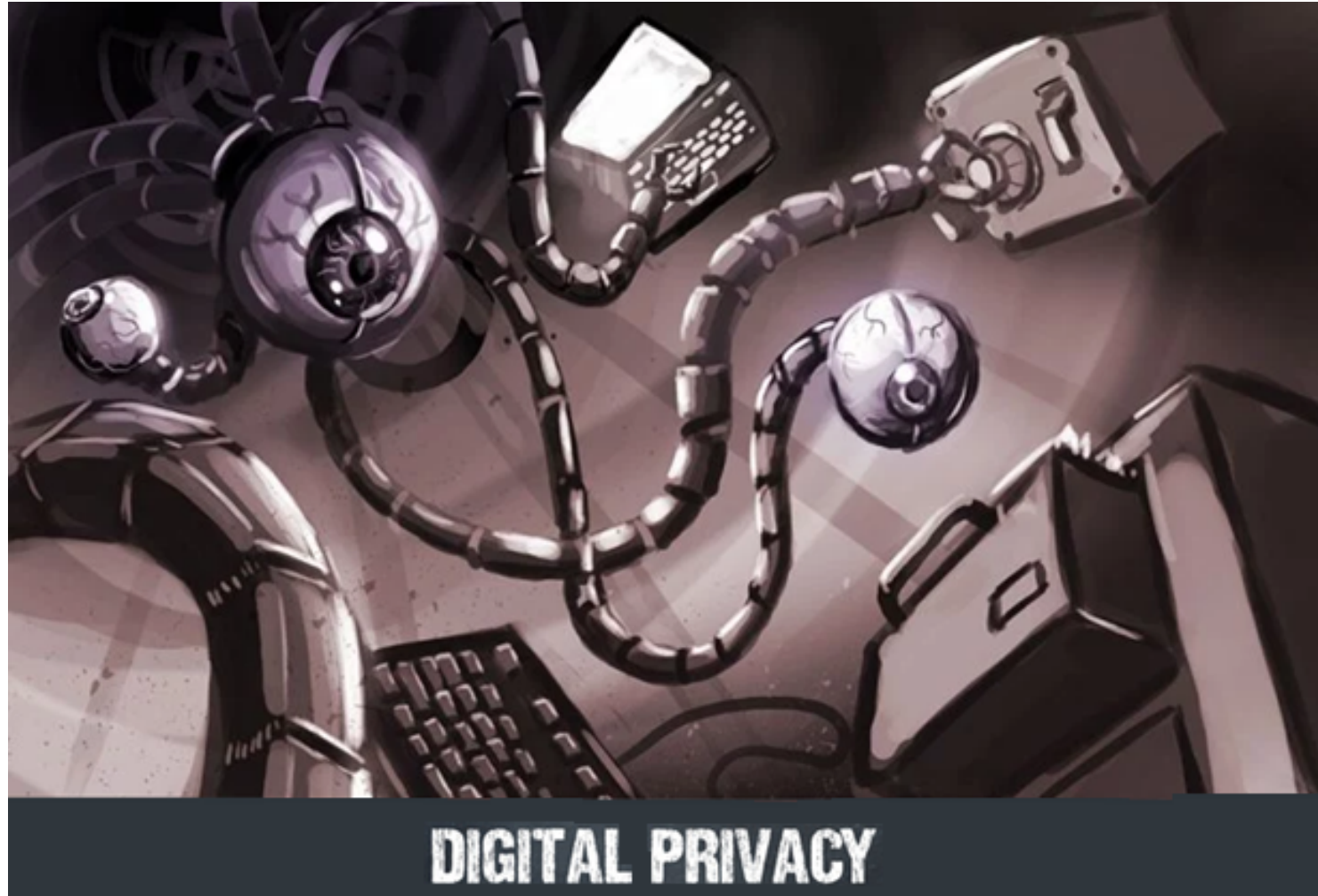
SaaS Solutions



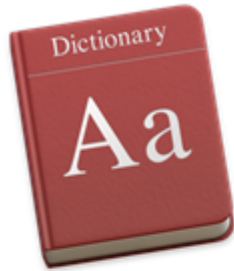
Tip
#6

Establish vendors, contracts, and clients as configuration items in your CMDB

Digital Privacy



Digital Privacy



The protection of an individual's information that is used or created while using the Internet on a computer or personal device. Digital Privacy is a collective definition that encompasses three sub-related categories; information privacy, communication privacy, and individual privacy.

Information Security Management



Enterprise Service Management



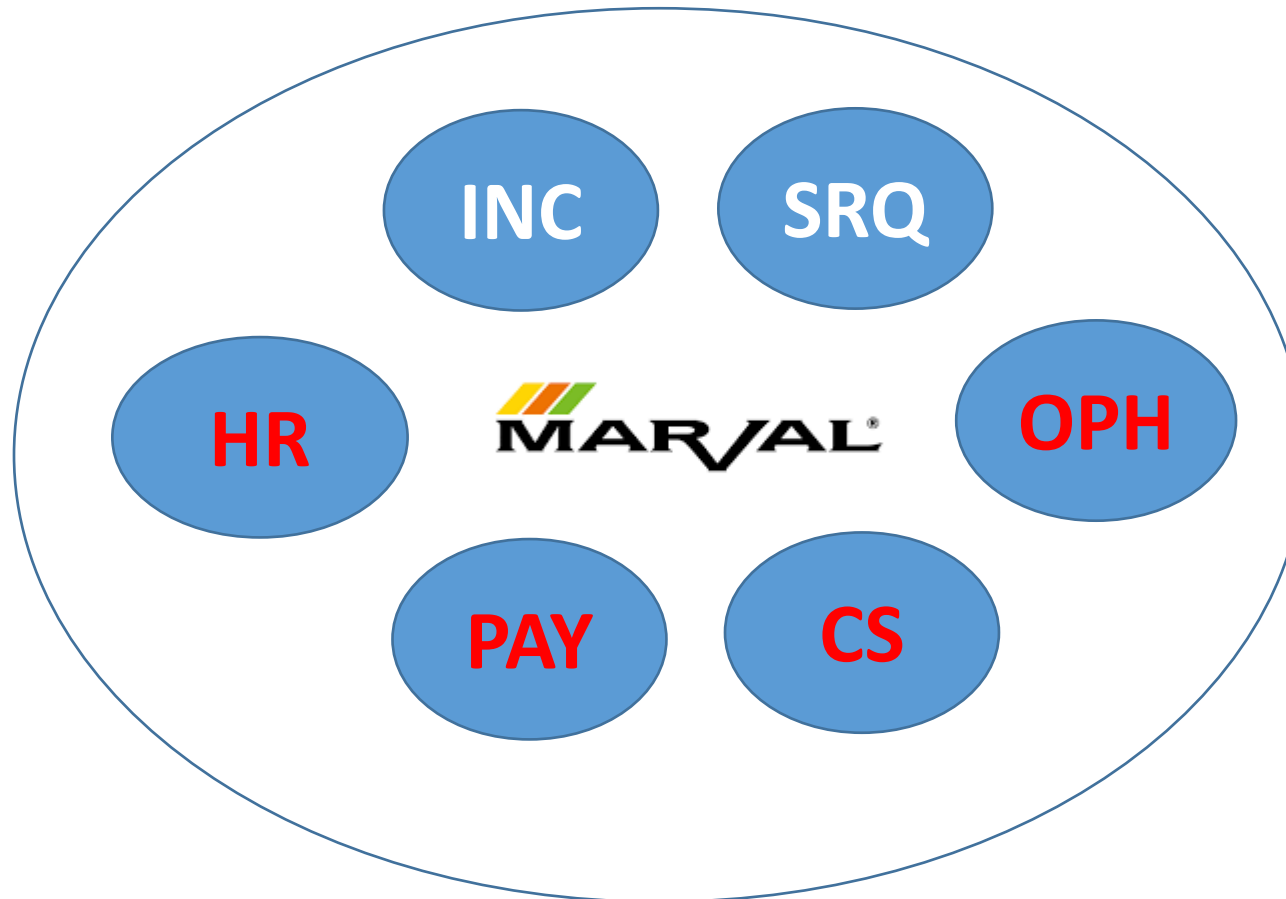
Digital Privacy

City of Ottawa Enterprise SM – 20 client groups

Non-IT Group	Service Request Management	Incident Management	Configuration Management	Service Level Management	Knowledge Management	Service Catalogue Management
Human Resources	✓			✓		
Corporate Security	✓	✓	✓		✓	✓
Parks & Recreation	✓				✓	✓
Information Management	✓	✓				✓
Ottawa Public Library	✓					✓
Finance Cash Operations	✓		✓		✓	
Transit Services	✓	✓			✓	
Fleet Services	✓				✓	
Environmental Services	✓					
311 Corporate Complaints	✓	✓		✓		
RCF Incidents		✓				✓
City Clerks Office	✓					
Payroll Services	✓	✓		✓	✓	
Accessibility Office	✓	✓			✓	
Supply Services	✓		✓	✓		
Public Health	✓					✓
Media Relations	✓			✓		
Economic Development	✓					✓

Digital Privacy

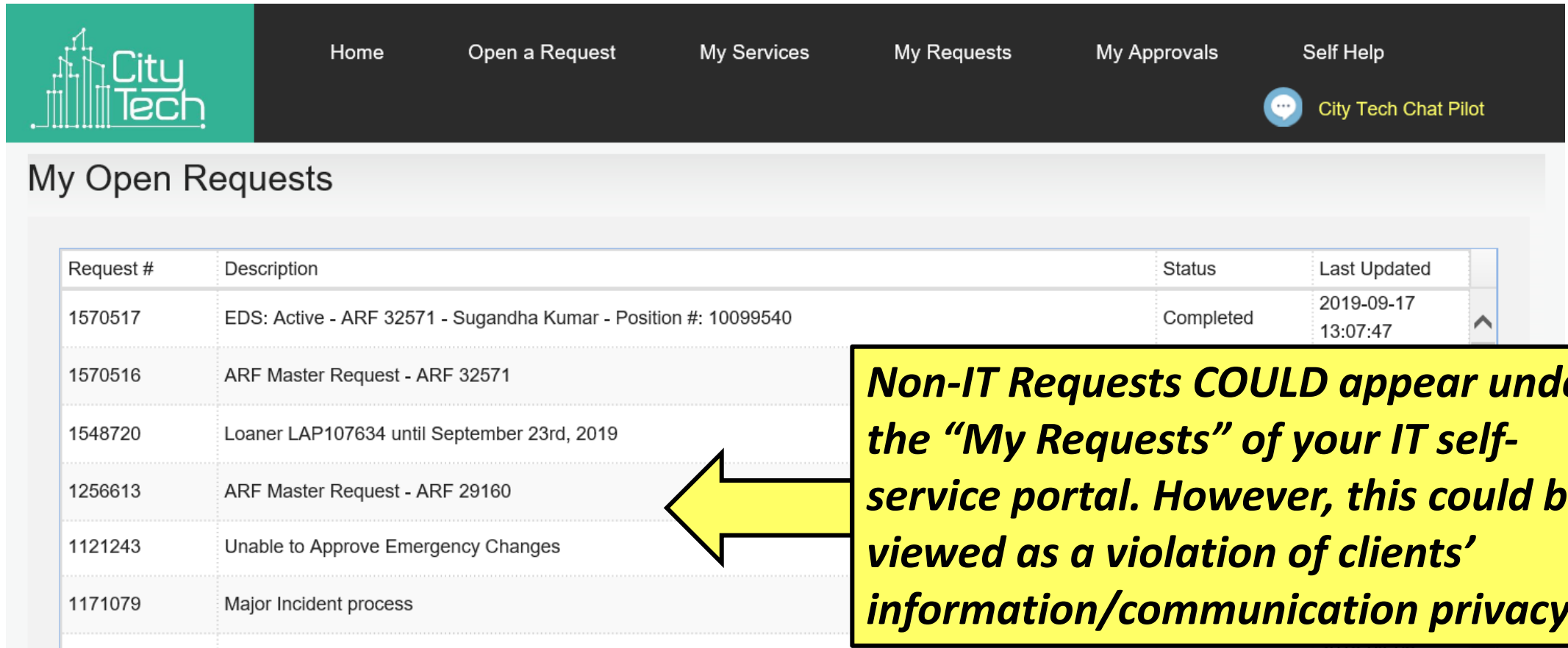
➤ In our ITSM tool, we use one instance for the entire enterprise, and use “Request Type segregation” as the basis of our security model



This introduces a new security concern with data privacy that never existed in a pure **IT** Service Management environment

Digital Privacy

➤ In an Enterprise Service Management model, you need to decide if your self-service portal is an “IT Portal” or an “Enterprise Service Management Portal”

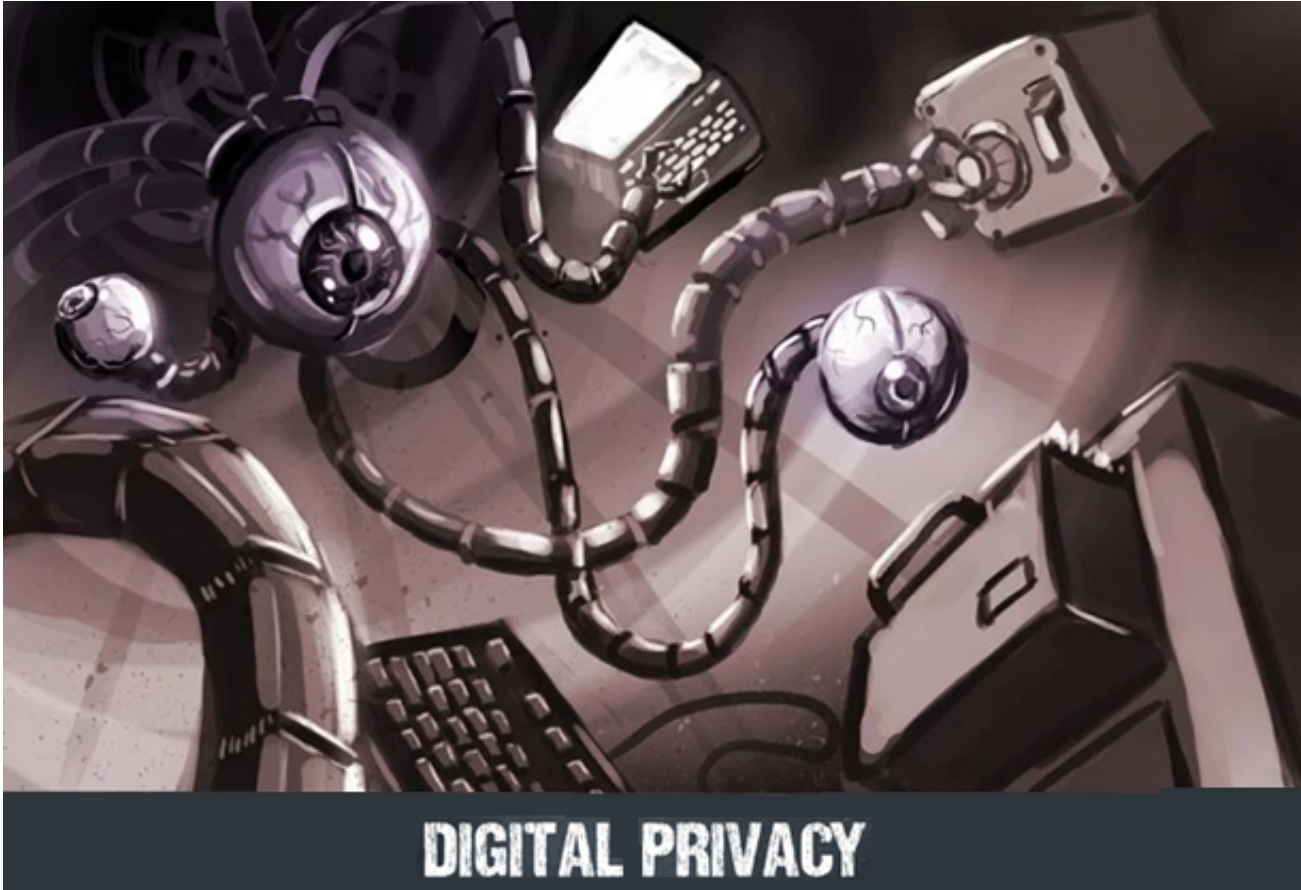


The screenshot shows a web portal for 'City Tech'. The navigation bar includes links for Home, Open a Request, My Services, My Requests, My Approvals, and Self Help. A 'City Tech Chat Pilot' button is also visible. The main section is titled 'My Open Requests' and displays a table of requests. A yellow callout box with a large arrow points to the table, containing text about non-IT requests and privacy.

Request #	Description	Status	Last Updated
1570517	EDS: Active - ARF 32571 - Sugandha Kumar - Position #: 10099540	Completed	2019-09-17 13:07:47
1570516	ARF Master Request - ARF 32571		
1548720	Loaner LAP107634 until September 23rd, 2019		
1256613	ARF Master Request - ARF 29160		
1121243	Unable to Approve Emergency Changes		
1171079	Major Incident process		

Non-IT Requests COULD appear under the “My Requests” of your IT self-service portal. However, this could be viewed as a violation of clients’ information/communication privacy.

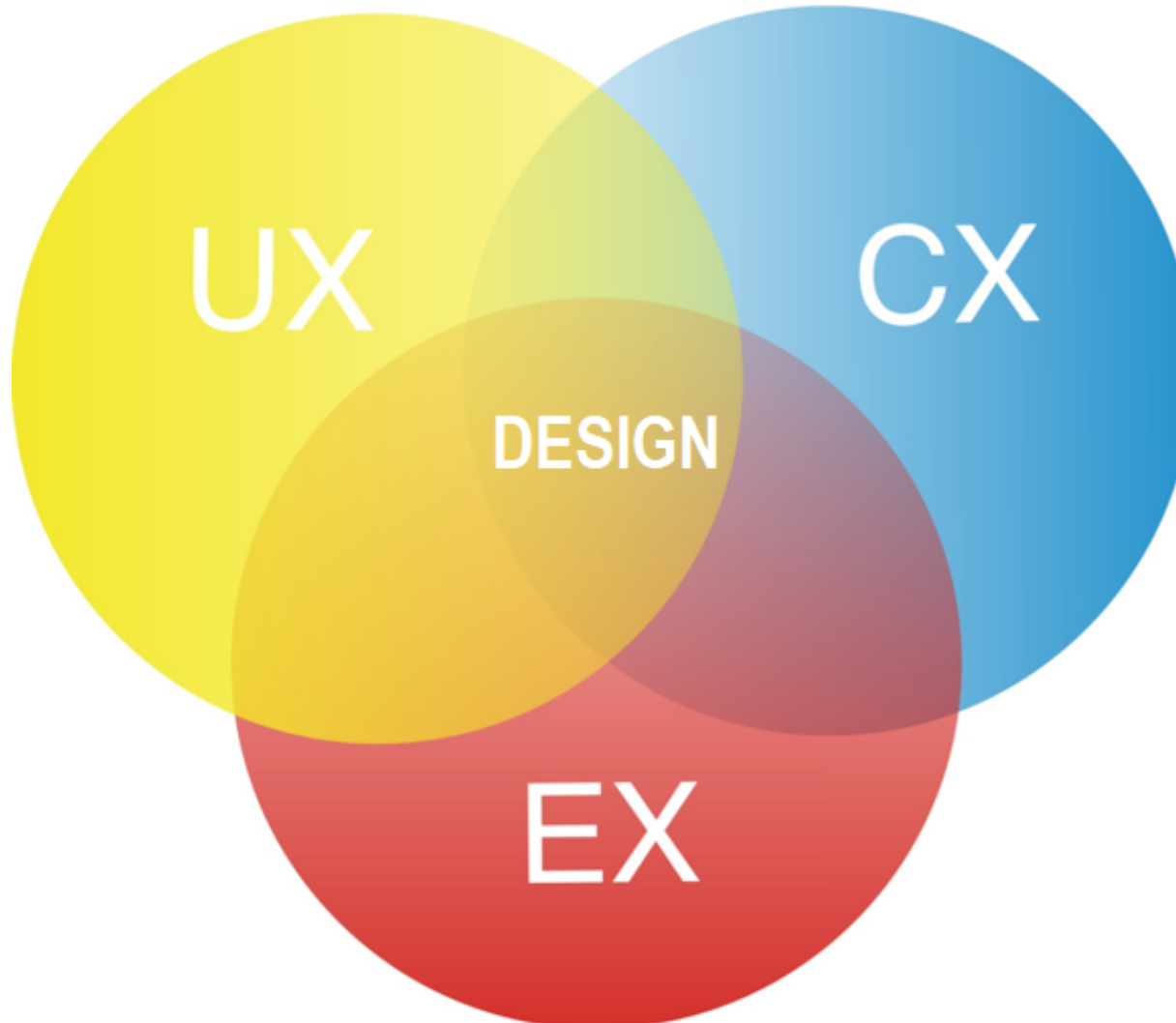
Digital Privacy



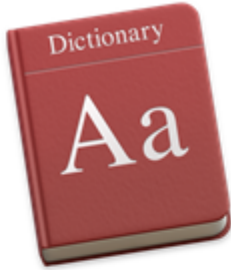
Tip
#7

Consider your security model when rolling out enterprise service management

EX / UX / CX Design



EX / UX / CX Design



The process design used to create products that provide meaningful and relevant experiences to users. This involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability and function.

Service Catalogue Management



Enterprise Service Management



EX / UX / CX Design

- **Going into their IT Service consumption experience, non-IT clients don't even like "work place" technology**
 - **Match the experience with their personal lives**

Purchasing IT Goods



Searching for content



Self-Serve Problem Solving



Technology
Trend
#8

EX / UX / CX Design

Purchasing IT Goods
Self-Serve Problem Solving

Guest Wireless Network

Author: Edwards, Michael | Affected Service: Hardware Services | Average Rating: [Red Circle]

Created: 07/31/2017 08:22:32

Description
Guest Wireless Network

Solution

Guest Wireless Procedure (GS_SSID)
City of Ottawa

Advice

- Cha
- Ema

Busine

- Acc
- Cisc
- Con
- EDS
- Gair
- Inter
- Orde
- Req
- Res
- Unal

Complete Sponsor Form

1. Have the guest user click on the wireless icon in the system tray.
2. Select the **GS_SSID** wireless connection from the list.
3. Click the **Connect** button. They will see a popup stating "Additional logon information may be required. Click to open your browser."
4. Have the guest launch their internet browser and fill out the presented form.
5. Click the **Register** button.

Sponsor Approves Request

1. Log into your **City of Ottawa** email. There should be an email from WIFI_SPONSOR@ottawa.ca asking to approve the request.
2. Select the **Click Here** link in the email to open up the web page.

Videos
Chat Pilot

Ville/City Tech

EX / UX / CX Design

EX / UX / CX Design

- **Create a Brand**
 - **Make sure your solution has your identity, your philosophy**
- **Clients should feel the service is coming from YOU, not the tool**
 - **Client notifications and surveys**
 - **Self-Service Portal or Service Catalogue**



EX / UX / CX Design

➤ Our original branding on Self Service Portal (2013)



- Walk in Service Centre shared the branding
- URL for our “IT Service Centre” was simply <http://its>
- Conducted focus groups session to develop brand

➤ Moved to “City Tech” brand (2017)



- All of ITS is now branded as “City Tech”
- Self Service presence now known as “City Tech Portal”

EX / UX / CX Design



No.	Name	Total Complete	Total Mandatory Complete	Progress	Generated On	Last Updated	Expires On
1	Service Desk Survey	0/6	0/5	0%	2018-02-23	2018-02-23	Never
2	ESO WEB Survey	0/3	0/2	0%	2018-03-16	2018-03-16	Never
3	ITS ISBP Survey	0/3	0/2	0%	2018-03-27	2018-03-27	Never

Today
22
April



Add Your Photo to Outlook and See a Colleague's Reporting Structure



CityTech Live Chat Agent on Portal!



CityTech Stop Open @ Laurier



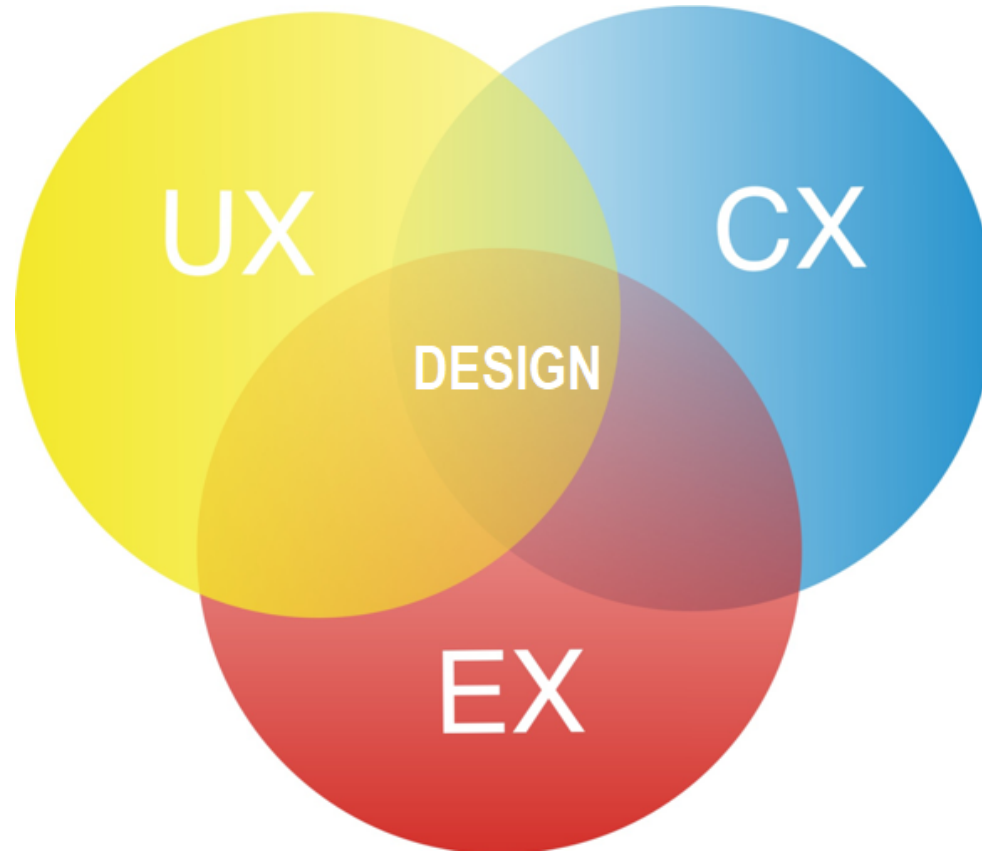
Connect with Technology Solutions for your Technology Needs



Wi-fi Upgrades: ITS Upgrading Guest Wi-fi



EX / UX / CX Design



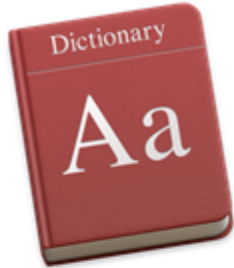
Tip
#8

Treat your employees like they are valued customers

Process Automation



Process Automation



The use of digital technology to perform a process or processes in order to accomplish a workflow or function. A wide variety of business processes and activities can be automated, or more often, they can be partially automated with human intervention at strategic points within workflows.

ITSM Tool Integration



Service Level Management

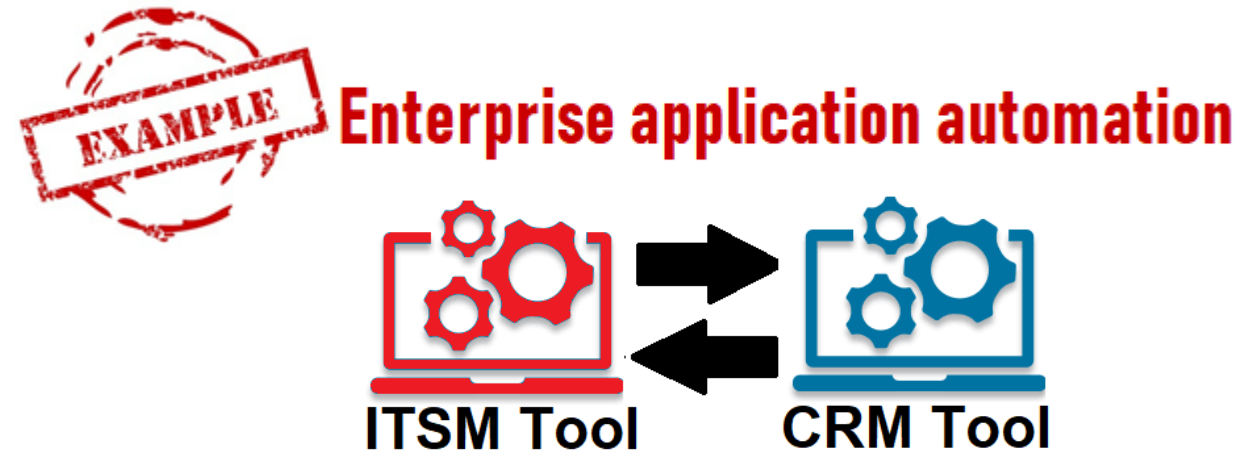


Process Automation

- Look for opportunities where there is a manual human process involved when you are integrating an ITSM process flow with another system



We set up a data-driven automated process to send a sub-request from our ITSM tool to a third party supplier when particular types of software are ordered, with remote update of the ITSM request from the vendor side



We set up a data-driven automated process to open ITSM requests from our CRM tool for certain classification of calls, with the completion of the CRM request automated upon ITSM request completion

Process Automation

- Look for opportunities where manual human process are having an impact on your service level targets



ITS-to-Procurement automation



Due to the fact that we have Procurement as a non-IT client using our Service Management tool, we set up a data-driven automated workflow process to send a sub-request to Procurement from an ITS request, with the status of the sub-request being visible to the client of the parent ITS request



Employee onboarding automation



Due to the fact that we have HR, Payroll and Corporate Security as non-IT clients using our Service Management tool, we have the potential to have an automated workflow process for onboarding a new employee, from the HR hiring, to the payroll input, to the network ID setup, to the photo ID and access

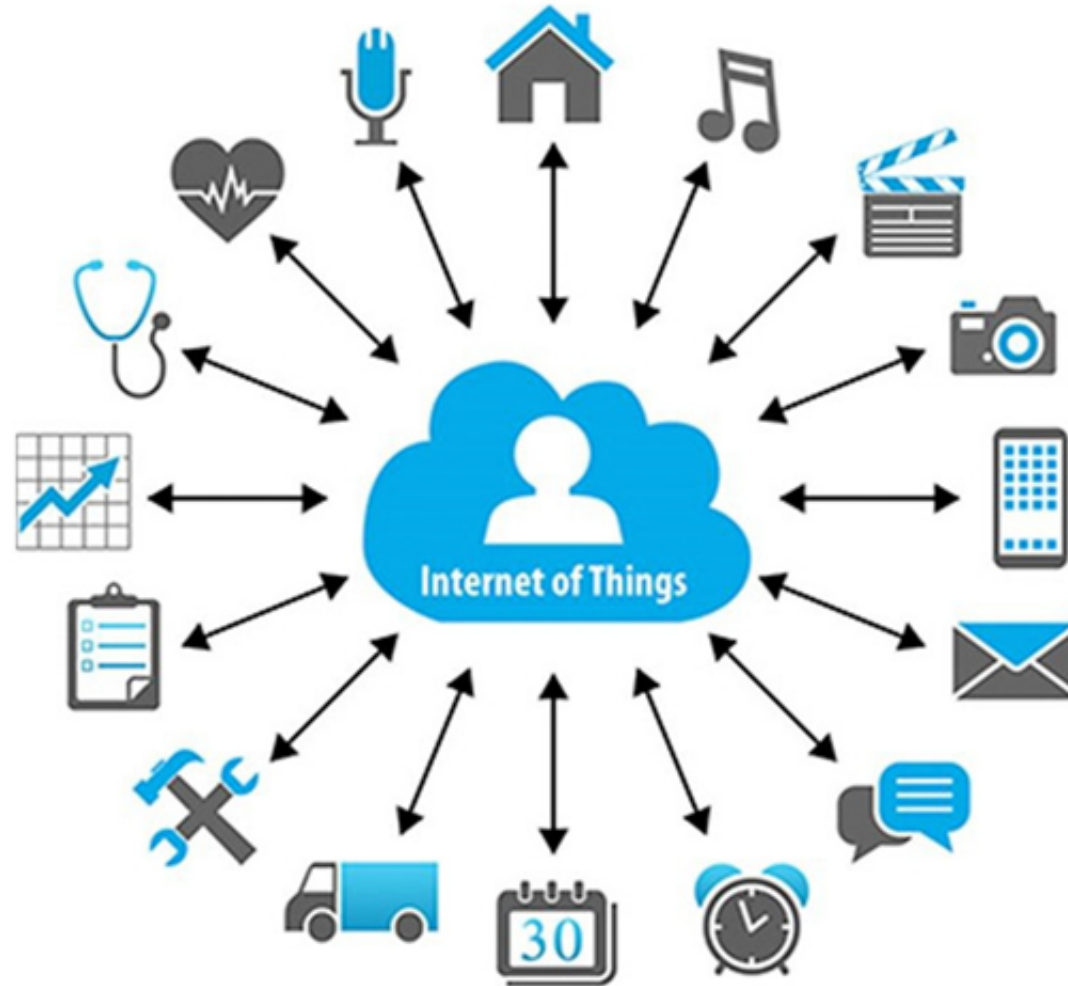
Process Automation



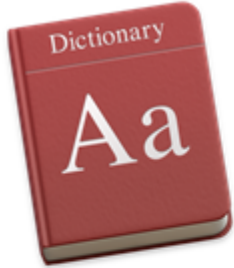
Tip
#9

Look for opportunities where manual process is affecting service delivery

Internet of Things



Internet of Things



A system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

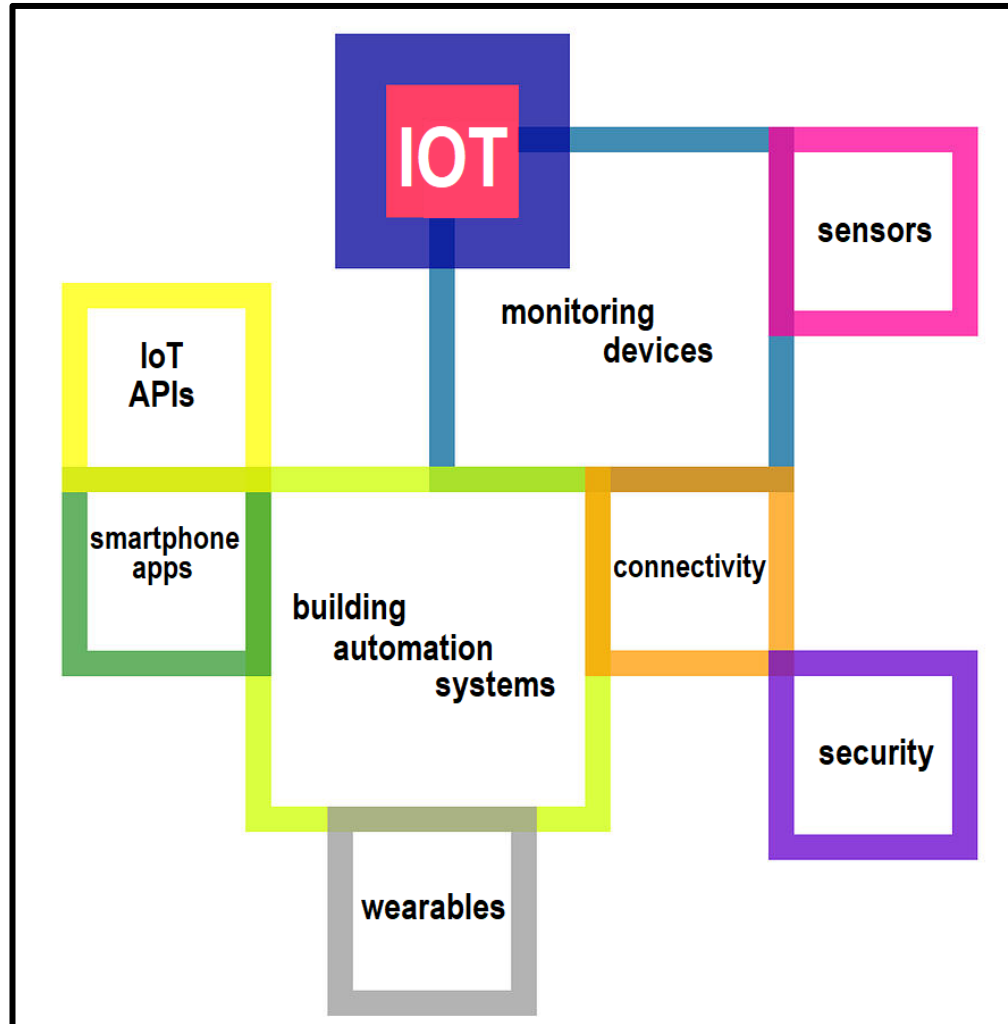
Incident Management



Configuration Management



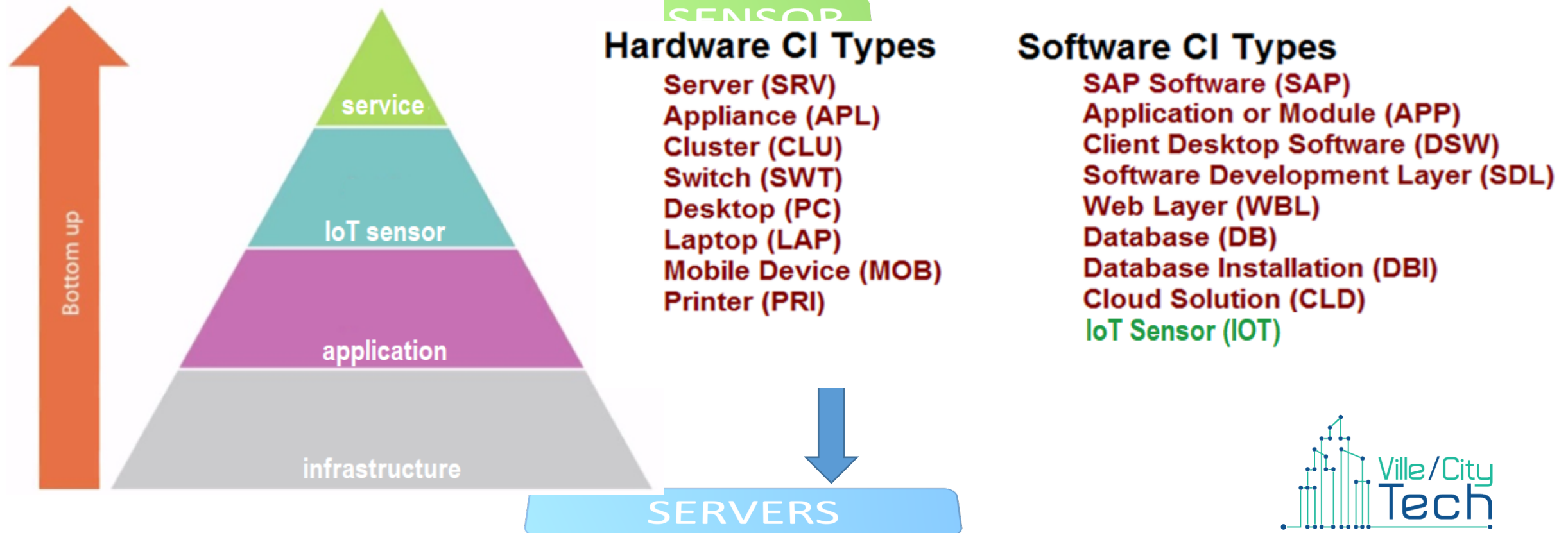
Internet of Things



Internet of Things

Configurations Items are made of 3 key components:

- **Assets** – there will be a new CI type with a large number in volume
- **Relationships** – will be critical, there will be new types of relationships
- **Attributes** – to describe the “type” of sensor, the “location” of sensor



Internet of Things



Tip
#10

Prepare for large volume of CIs and large volume of complex incidents

Conclusion – Recap of 10 Tips

- 1) Artificial Intelligence - *Start with incremental change to Tier Zero support and Knowledge Management*
- 2) Machine Learning - *Look for opportunities, because the robots are smarter than us*
- 3) Mobile Apps - *Think of features that are unique or useful from the mobile platform*
- 4) DevOps & Agile - *Simplify your change & release processes, and increase your standard change volume*
- 5) Cloud Computing - *Establish your on premise processes in the cloud, but use opportunity to improve*
- 6) SaaS Solutions - *Establish vendors, contracts, and clients as configuration items in your CMDB*
- 7) Digital Ethics and Privacy - *Consider your security model when rolling out enterprise service management*
- 8) EX / UX / CX - *Treat your employees like they are valued customers*
- 9) Process Automation - *Look for opportunities where manual process is affecting service delivery*
- 10) Internet of Things - *Prepare for large volume of CIs and large volume of complex incidents*



Wanted Dead or Alive:

ITSM in the Age of Evolving Technologies



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