

## Boosting your performance in the connected world.

Public cloud IoT-strategy - case HSY

## Agenda

- Introduction company presentation
- IoT-strategy case HSY
- Public cloud in IoT strategy
- Summary





#### We are here:

- Sweden
- Finland
- Denmark
- Poland
- India

## 

**Nationalities** 

Assignments in 21 countries 88%/0

Business with sustainability effects

Offerings



## Full life cycle approach

As makers of tomorrow we are your partner in strategic advisory, innovation, creation, testing and management of digital solutions that are ahead of the curve.



## Makers of Tomorrow

Makers, because we make digital happen. We believe in talking less, doing more.

CYBERCOM GROUP

**Tomorrow**, because we want to create a better tomorrow.



# Your partner in digital transformation



## Connecting production and products has profound impact

Everything is optimised in systems instead of individual units. The sustainability effects include higher security and lower energy use.

## **Digital transformation**

We understand the trends and phenomena around the drivers, *how business and processes change* as a result

"Digital transformation reshapes every aspect of a business."

Forbes on digital trends

Change in value creation

From products to services and systems to experience





Change in the way organizations work

From linear and separate value chains to cross-operational value streams



CYBERCOM

Reference

## Digital transformation advisory

**Vision and Strategy** 



SUSTAINABLE CITY



### IoT strategy for HSY -Helsinki Region Environmental Services Authority

HSY produces waste management and water services for the Helsinki Metropolitan Area as well as provides information on the Helsinki Metropolitan Area and environment.

The organization realized that IoT has become a central driver in it's services development, and needed a clear strategy for running and managing these projects in an efficient way. As the biggest organization in its field in Finland, HSY has the role as a leader and example of innovative solutions within waste management and water service. In addition, IoT projects in HSY are often connected to private sector operators, which put focus also to the business activity and HSY's role as innovation generator supporting private sector parties.

Cybercom helped HSY to clear the company's IoT vision and identify ways to manage IoT projects within the organization in a unified way. The strategy was also designed to support further innovation and cross-boundary work both within the organization as well as with third parties.

As the result, Cybercom was trusted to continue the technical work and put the strategy to practice during summer / autumn 2017.

### Starting point to IoT strategy



technologies

guidelines

**PoC or prod?** 

data often in thirdparty platforms

CYBERCOM GROUP

## **IoT-strategy targets**



Efficiency from technology standards



IoT security is understood and managed better



Data ownership is managed



Data is available and found in corporation level



Allow fast POCs and technology trials



Allow POC to grow to full integrated production systems

CYBERCOM

## **HSY IoT-visio**

IoT-ratkaisut toteutetaan ketterästi mutta hallitusti ja yhteistä HSY-toimintatapaa noudattaen HSY:llä on työkalut toteuttaa IoT-projektit ilman riippuvuutta toimittajista IoT-ratkaisuilla tuotettu data on hyödynnettävissä palveluiden parantamisessa koko HSY:n tasolla





## Data lake





Offerings

## amazon webservices™

Azure

CYBERCOM

## **Cloud Services**

Your agile cloud partner from design to managed operations. We help you utilize the cloud capacity and traditional virtual capacities in an efficient and flexible manner.

## Why public cloud in IoT strategy?



- Simple and transparent pricing model that fits POC and PROD
- Managed and robust global reach hi-availability services
- Run diverse IoT-application catalog in single platform
- From POC to PROD to full digital transformation
- Great scalability
- Good Integrations to BI, analytics or almost any system

## Pain points in public cloud?



- Some level of technical competence or good partner required for organization
- Hardware integrations often are not trivial
- Heterogonious device management from HW level still complex
- Dependent of international data traffic
  - -(AWS in Sweden, AZURE norway, GOOGLE Finland)

### Public Cloud – SaaS, PaaS and IaaS

SaaS Software-as-a-Service: Instant deployment ready made IoT applications.

PaaS Platforms: instant analytics, data warehouses and user interfaces

laaS

Infrastructure: Fast software development: computing, networking, CDN, Integration

CYBERCOM GROUP

## SaaS example - IoT central Demo

CYBERCOM GROUP

https://azure.microsoft.com/en-us/services/iotcentral/demo/



ture loT Central		ry Oranita Waller
	Create Application We performed a low thread from you, so we can could your application	
	Accession Faces 1/4	
	Anny Sweet (International Control of Control	
	Application Template	
	Application Smithe Contaso Sample Devkits :	
	The rest of the back matching of the second se	
	Automatician Contraction	
	A loss 30 Der Inne Aspendenn	
	300 (122) per - application y der "Henrich (michales: 130 (descent)) 4.50 (122) per automosischeren (per descent) stifter (mail 36 (122) per alementer (C. 2) al main en al	

#### $\langle$ Step 1 of 3 $\rangle$

#### **Create Application**

Rhonda is a Builder at Contoso who is skilled at device side engineering but not the cloud. Product Managers at Contoso are planning to add new monitoring to it's vending machines and Rhonda is tasked to IoT-enable Contoso's products. Rhonda can start from an existing application template. After she evaluates the free trial she can provision her production application easily.



#### < Step 2 of 3 >

#### Create a device

Rhonda is able to choose a template and create a device right away.



< Step 1 of 4 >

### Define and simulate device measurements

Rhonda can define the capabilities of her vending machine, and can test them by simulating telemetry even before connecting a physical device.



#### $\langle$ Step 1 of 5 $\rangle$

#### **Operator Homepage**

Karl is an Operations Manager in charge of different types of vending machines on behalf of several clients. Karl and his team ensure that none of the assets Contoso manages have issues, and if they do, they are fixed asap. Karl is able to use the operator homepage Rhonda designed for him to quickly access all aspects of the solution.



#### < Step 2 of 5 >

#### **Receive Notifications**

A rule has triggered and alerted Karl to an issue with the temperature on a machine. He can click the link to open the IoT Application directly to the machine concerned.



#### < Step 5 of 5 >

#### **Time Series Analytics**

Karl can use the embedded time series analytics charts to monitor all connected devices and make sure that all machines are operating within normal parameters.

### Good public cloud architecture



Cloud native

Microservices

Microservices



Serverless based



Hybrid cloud, edge compute and on-premises

CYBERCOM GROUP

### IoT architecture based on public cloud (Azure)



### Some examples of cool services:



AWS **Greengrass** -Local compute, messaging, data caching, sync, and ML inference capabilities for connected devices.

CYBERCOM GROUP



AWS Device Defender Security management for IoT devices



AZURE Logic Apps - Automate the access and use of data across clouds without writing code



AZURE Digital Twins - Model and interact with the real world

### CYBERCOM

### Summary

- Do you need IoT strategy?
  - -How IoT fits to everything else you do?
  - Is your data in silos or in use?
  - -How do you enable bottom-up and manage top-down IoT?
- Public clouds are great for IoT
  - -Public cloud has many benefits in IoT strategy
  - -Cannot go wrong with AWS os Azure
  - -Cloud is evolving fast towards simple and ready-made services



## cybercom.com

Tarmo Pajunen Cybercom Finland Oy tarmo.pajunen@cybercom.com