

# Device management

April, 2018



# Agenda

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## **Introduction**

Why do we need device management?

## **Device management activities**

Operational efficiency

Compliance & security

## **Exercises**

Measure battery voltage

Onboarding with WiFi Manager

OTA Update

<https://thinx.cloud/>



# Introduction

# Typical device lifecycle

## Devices will ...

Come and go

Disappear

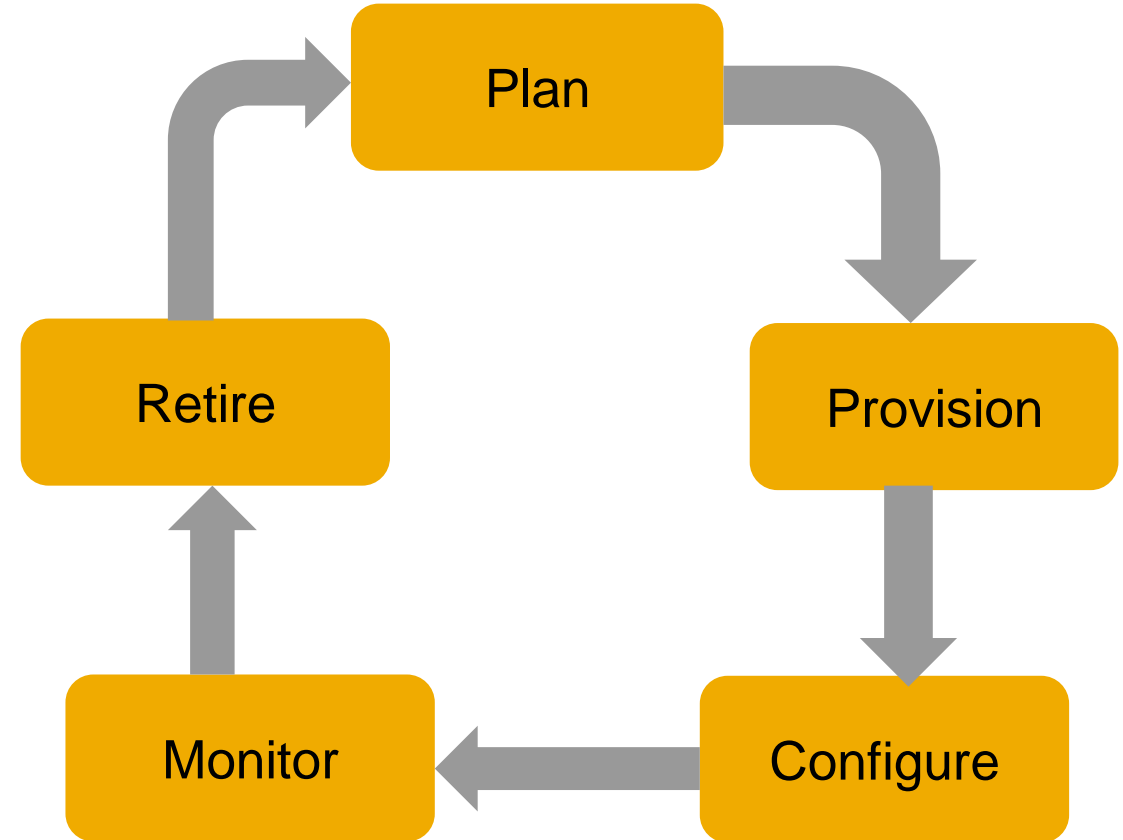
Fail

Misbehave

Get compromised

...

And someone has to take care of it 😊



# Why device management?

## **Operational efficiency (less cost)**

Improve employees to devices ratio

Reduce travel expenses

Less damage & repair (e.g. predictive maintenance)

## **Business agility & QoS (more income)**

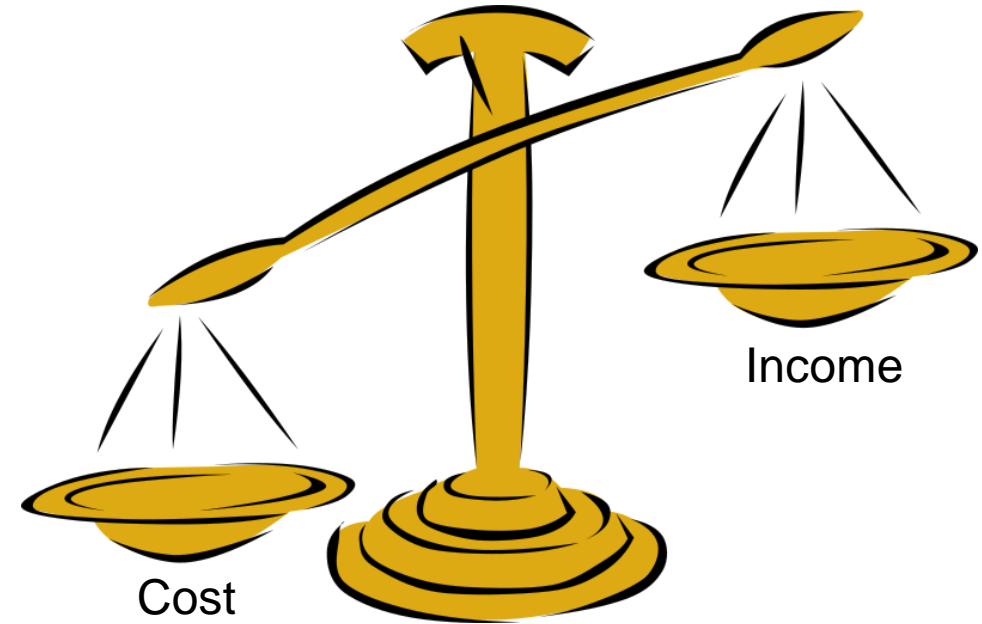
Respond to business demand

Identify & resolve issues faster

## **Compliance & Security (manage risk)**

Don't break the law

Spot and handle security incidents efficiently



Risks

# Device management activities

# Efficiency

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## **Provisioning, replacement & retirement**

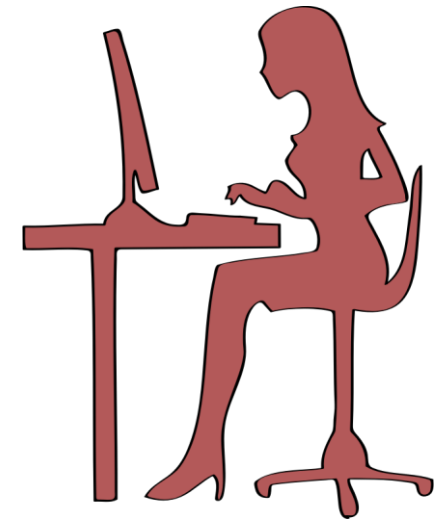
- Reduce personnel cost (e.g. customer self service)
- Optimize field ops schedules
- Integrate with existing systems (e.g. CRM, ERP)
- Handle heterogeneity (anticipate different hardware)

## **Warranty & claims management**

- Optimize device specific workflows (e.g. serial numbers ...)
- Analyze statistic to identify root causes

## **Monitoring**

- Battery, network, storage and other resources
- Performance (e.g. faulty sensor)
- Context awareness (geo location, environment)



# Efficiency contd.

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## Maintenance

### Configurations & updates

- OTA updates (with safe mode)
- Bulk operations
- Scheduled in maintenance windows (minimize downtime)
- Rolling updates (exp. rollout, health check, retry & rollback)

Minimize downtime (automatic failure recovery)

Smart alerting (that doesn't flood 😊)





# Compliance & Security

## Compliance

Restricted change management

- Who is allowed to push an update or reconfigure a device?

Data privacy

- Who is allowed to look at device/customer data?

Auditing

- Who did the above things, when and why?

## Security

Secure provisioning

Intrusion detection & Device blacklisting

User reset & safe update for compromised devices

...





# Exercises



**Thank you**