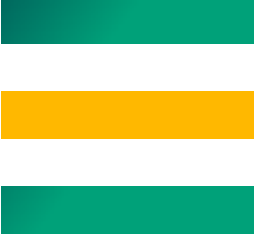




Delivering the digital transition

Mark Davenport,
Smart Buildings Director, Equans UK & Ireland





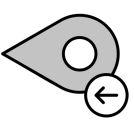
12 KING STREET

Smart Building application

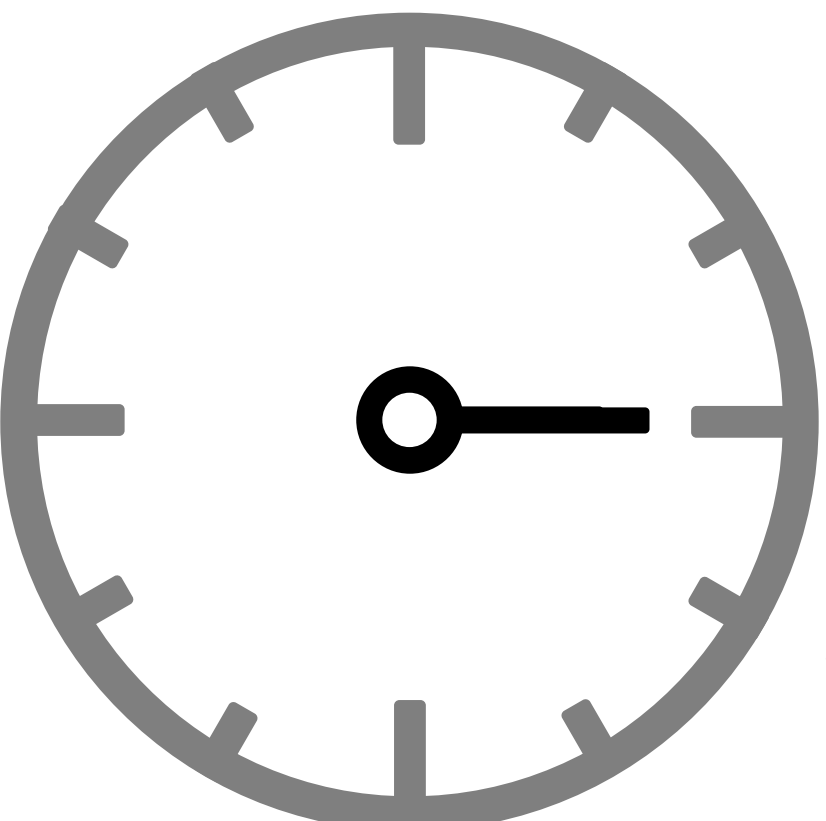
Largest cross-functional wireless
infrastructure in Europe
Disrupting the built environment

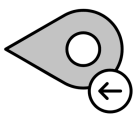


A lot of questions to ask



The starting point





The starting point



So you want a Smart Building! What does that mean?



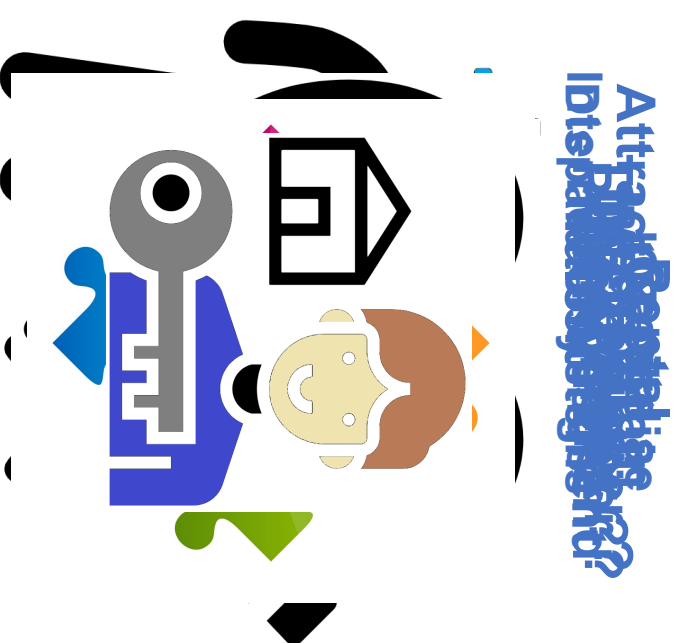
Who is it that wants a Smart Building?



Why do you want a Smart Building?

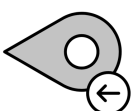


What is a Smart Building?

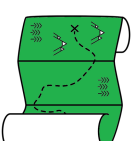




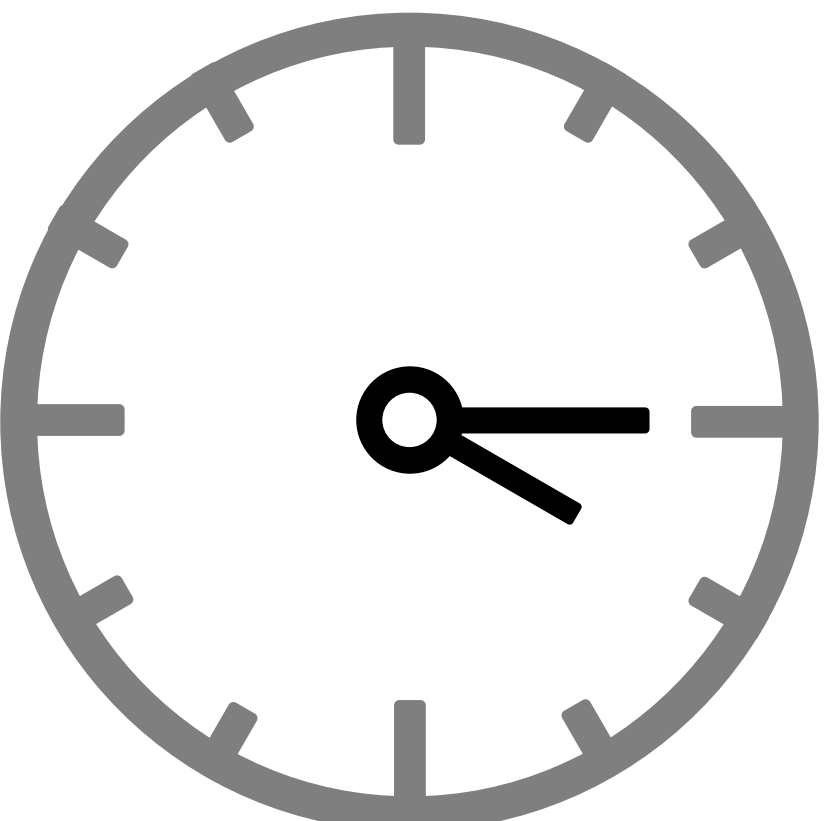
Let's map this out

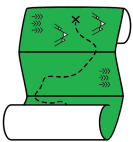


The starting point



Lets map this out





Let's map this out



A Smart Building is a major disruption to the construction model



The journey has to be defined from the outset

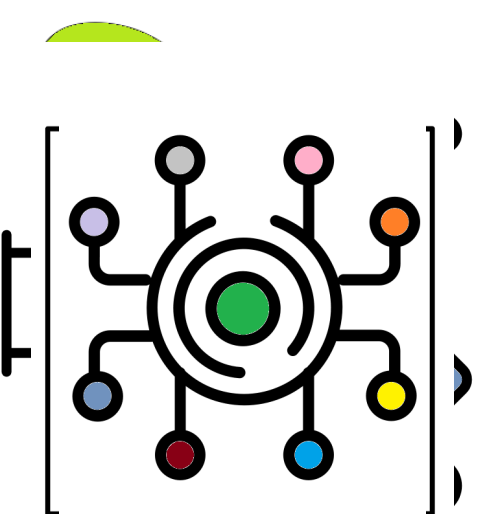


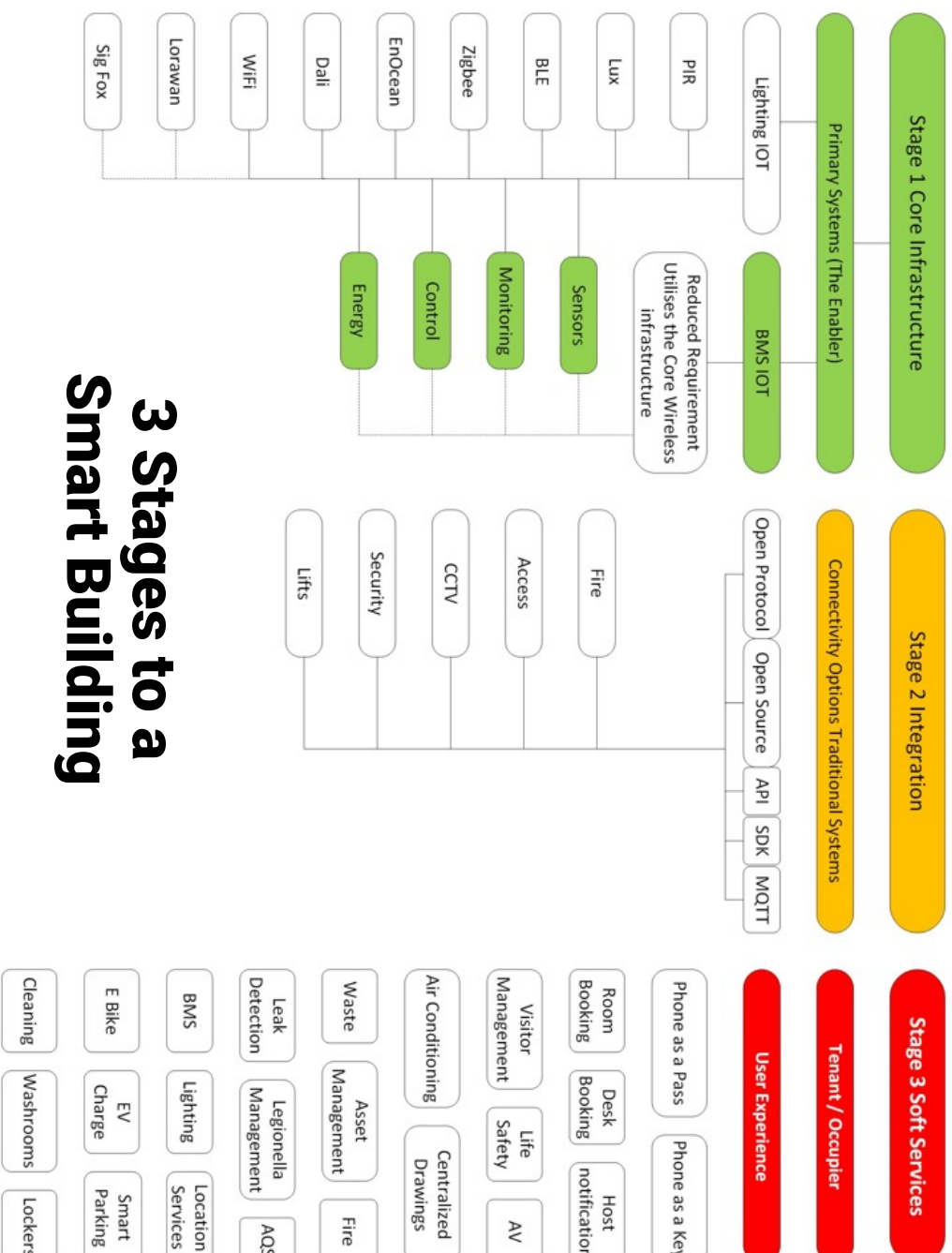
Introduction to the project in a new timeline



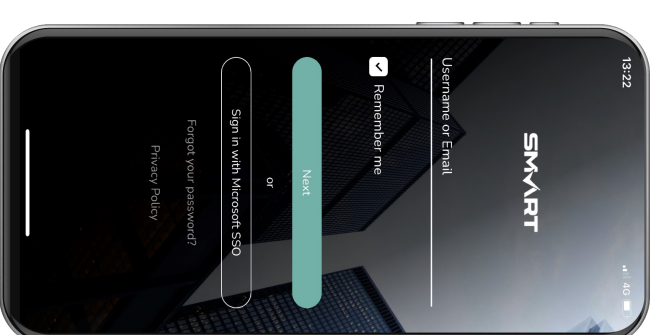
Defining the infrastructure

3 Staged
Disruption
Architecture
Integration





3 Stages to a Smart Building

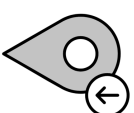


App Structure

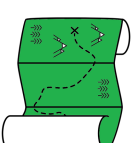
- Operational
- Occupant
- Visitor
- Student
- Engineering
- Service



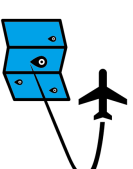
Let's start the journey



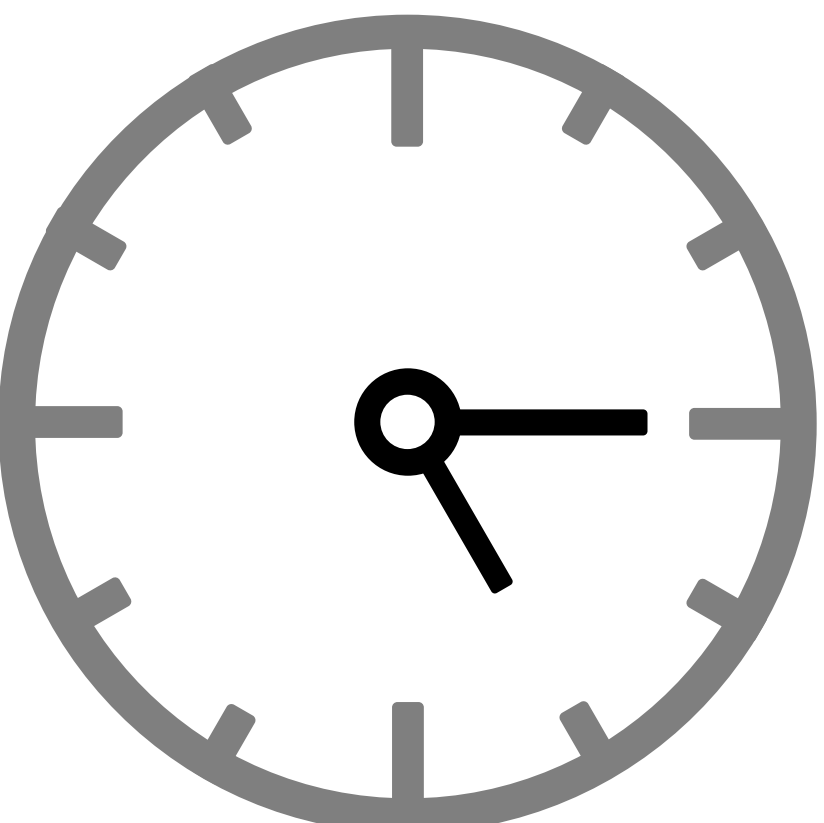
The starting Point
Who wants it and why?

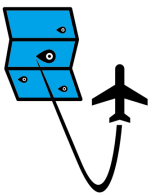


Lets map this out
Define the reasons



The journey can begin
Align the entire delivery team





Let's start the journey (What do we need to cover?)



Define the process



Educational journey



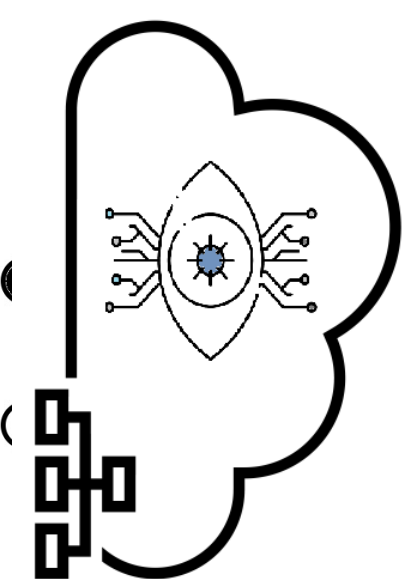
Engaging the supply chain



Defining the infrastructure

All Inclusive

- Stakeholder
- Developer
- Architect
- Consultant
- Main Contractor
- Sub Contractor
- **Managed by the Main Contractor**
- **Managed by the Main Contractor**
- **Managed by the Main Contractor**
- **Managed by the Main Contractor**





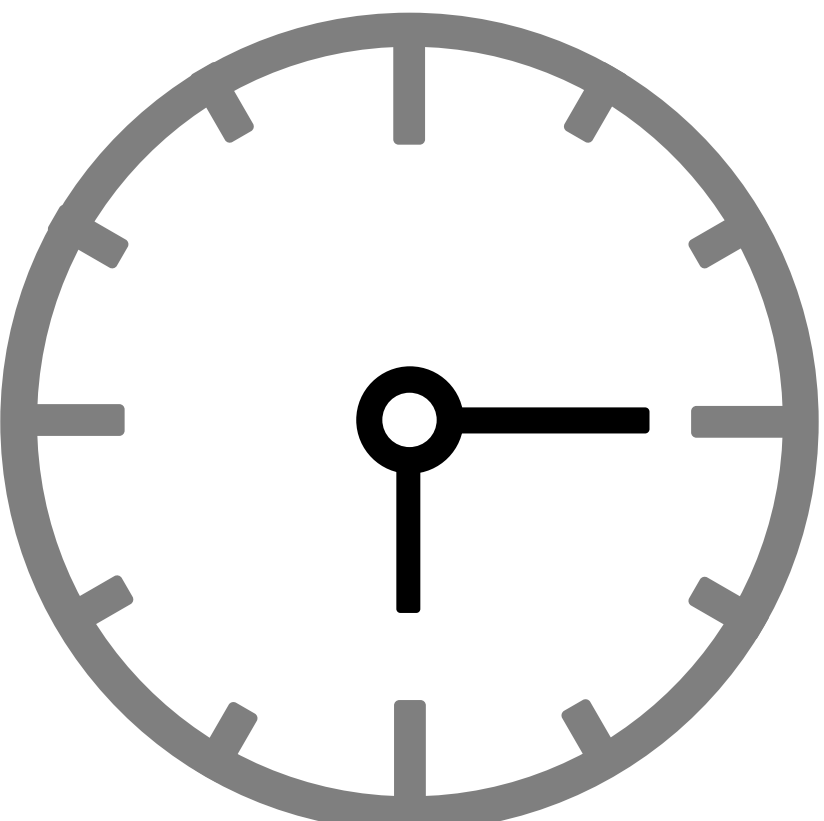
Education

 The starting point
Who wants it and why?

 Lets map this out
Define the reasons

 The journey can begin
Align the entire delivery team

 The education process
Series of workshops





Educational process



Wizard workshops



Who should be involved?



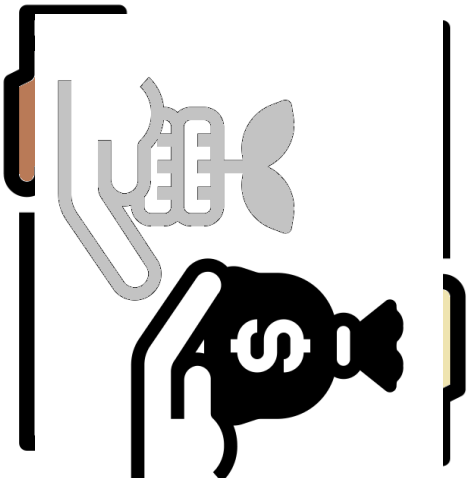
What would these cover



Desired outcomes

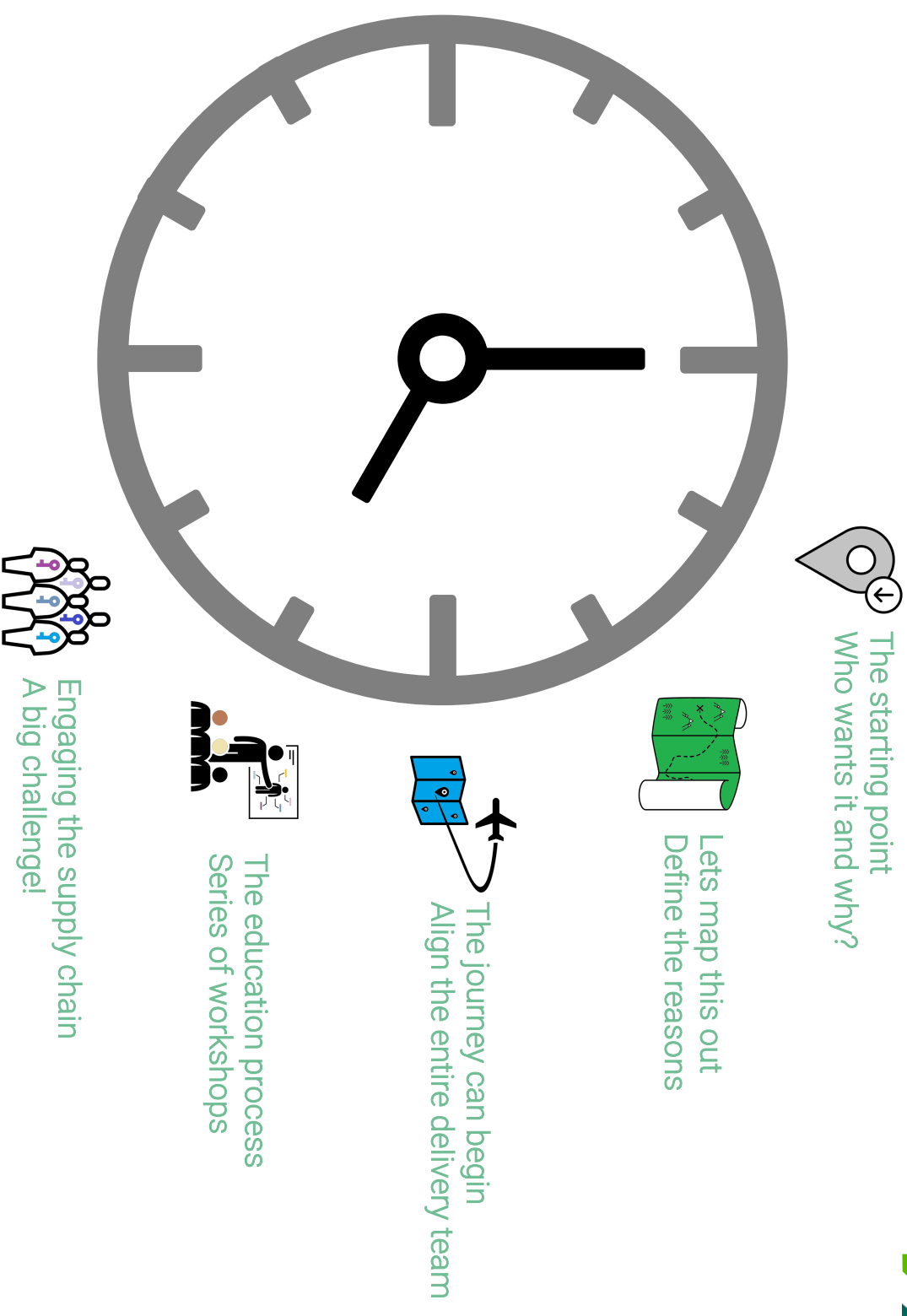


Education is the
entire supply chain





Human factors





Engaging the supply chain



The biggest challenge



A new way of working



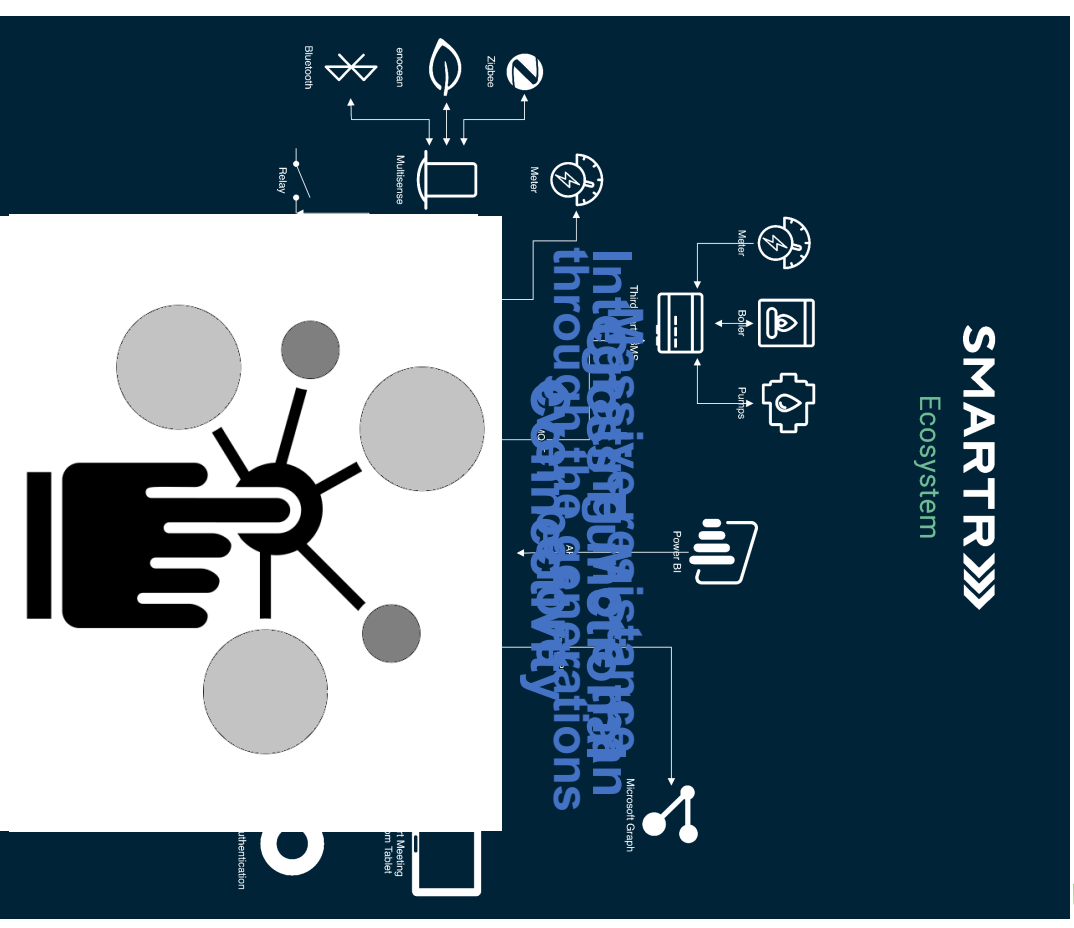
Totally disrupts the construction model



Desired outcome



What does this mean?



Design




 The starting point
Who wants it and why?

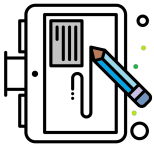
 Lets map this out
Define the reasons

 The journey can begin
Align the entire delivery team

 The education process
Series of workshops

 Engaging the supply chain
A big challenge!

 Design
low level



Integration design



A new skill set very much in development



Understanding of how a Smart Building needs to operate



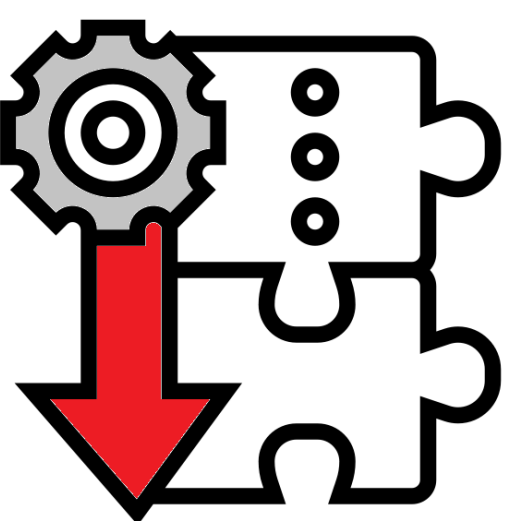
High level of importance on this stage



Amalgamate wired and wireless technologies

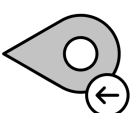


Seamless Cross
Platform
Interoperability

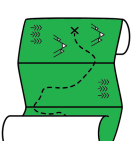




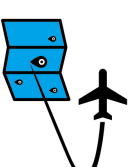
Integration tools



The starting point
Who wants it and why?



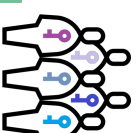
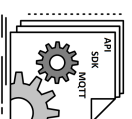
Lets map this out
Define the reasons



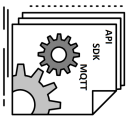
The journey can begin
Align the entire delivery team



The education process
Series of workshops



Engaging the supply chain
A big challenge!



Align the technologies



Open explained



Enhanced design v traditional specification



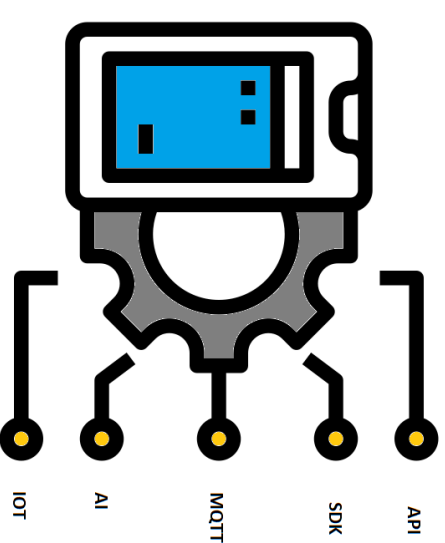
Multiple networks and hardware gateways



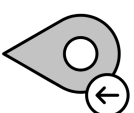
Cross-functional integration across all disciplines



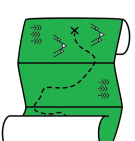
Positioning Software in
Hardware Solutions
Securely
Gateway



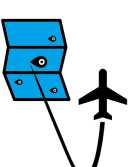
IoT emerging technologies



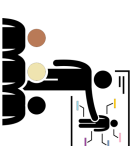
The starting point
Who wants it and why?



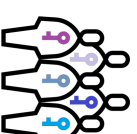
Lets map this out
Define the reasons



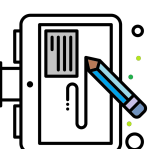
The journey can begin
Align the entire delivery team



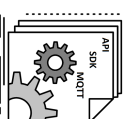
The education process
Series of workshops



Engaging the supply chain
A big challenge!



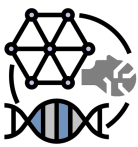
Design
low level



Align Integration open
source technologies



Connecting people,
places and things



Connecting people places & things



People



Places

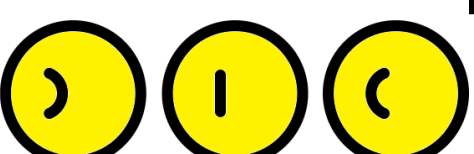
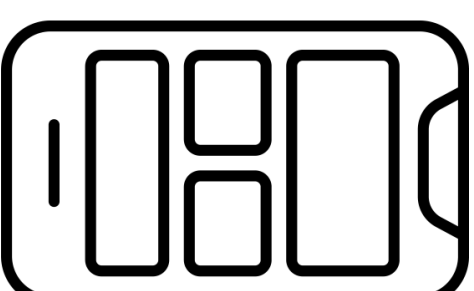


Things



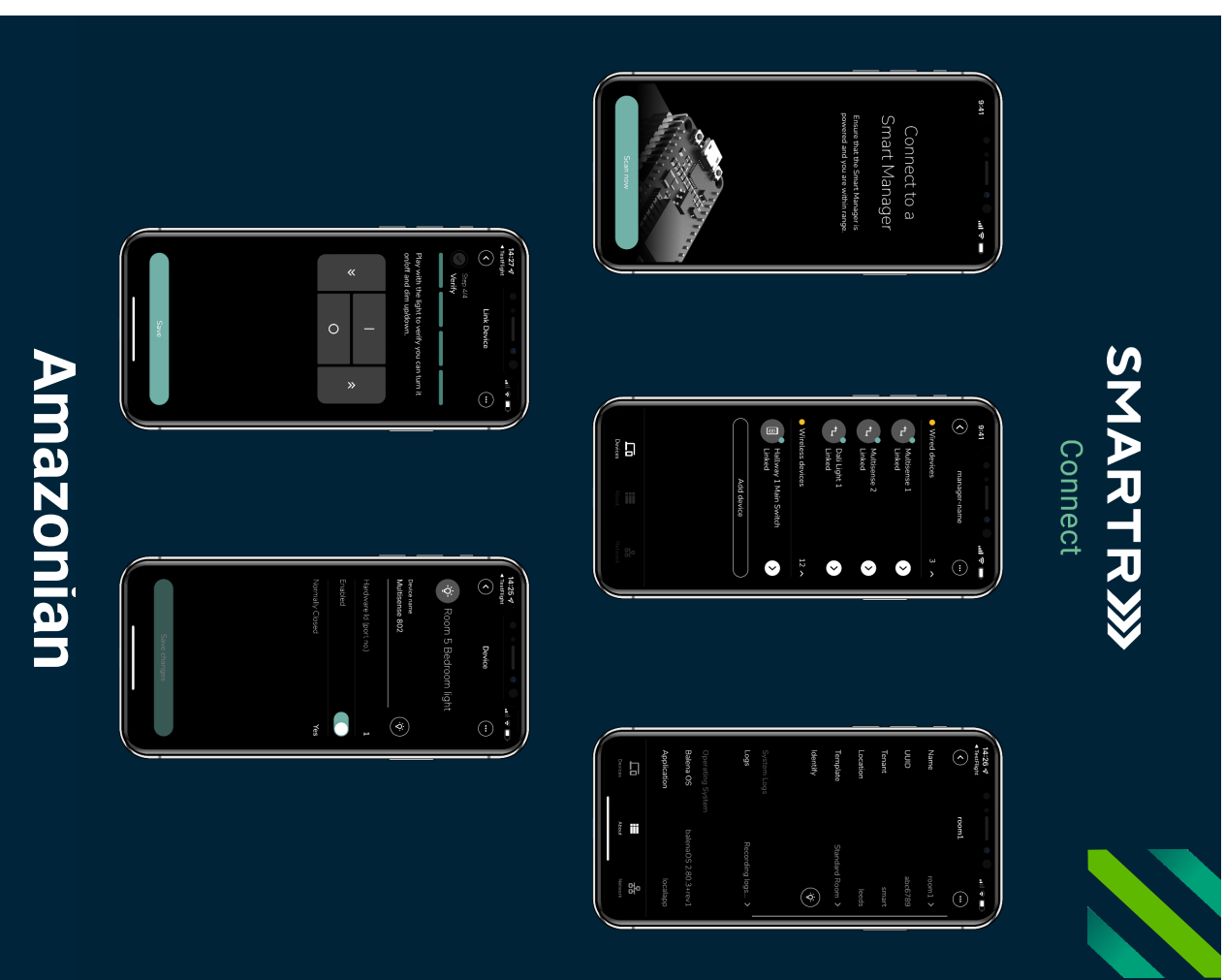
User journey

Smartphone app for people



De-skilled deployment

- **Simple config tools**
 - Discover networks
 - Self-build networks
 - Multiple networks in a single device
 - Identify protocols
 - Identify products
 - Add products
 - Link products
- **Automated strategy**
 - Strategy blocks auto populate
 - New strategies can be added
 - Node red open-source tools
- **Self-build UI**
 - User interface auto populates
 - Increased features
 - Cross functional technologies



Amazonian



Integration platform

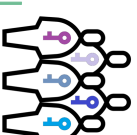
 The starting point
Who wants it and why?


Let's map this out
Define the reasons

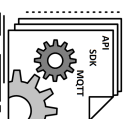

The journey can begin
Align the entire delivery team


The education process
Series of workshops

Engaging the supply chain
A big challenge!

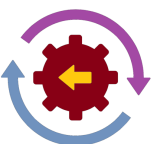


Design
low level

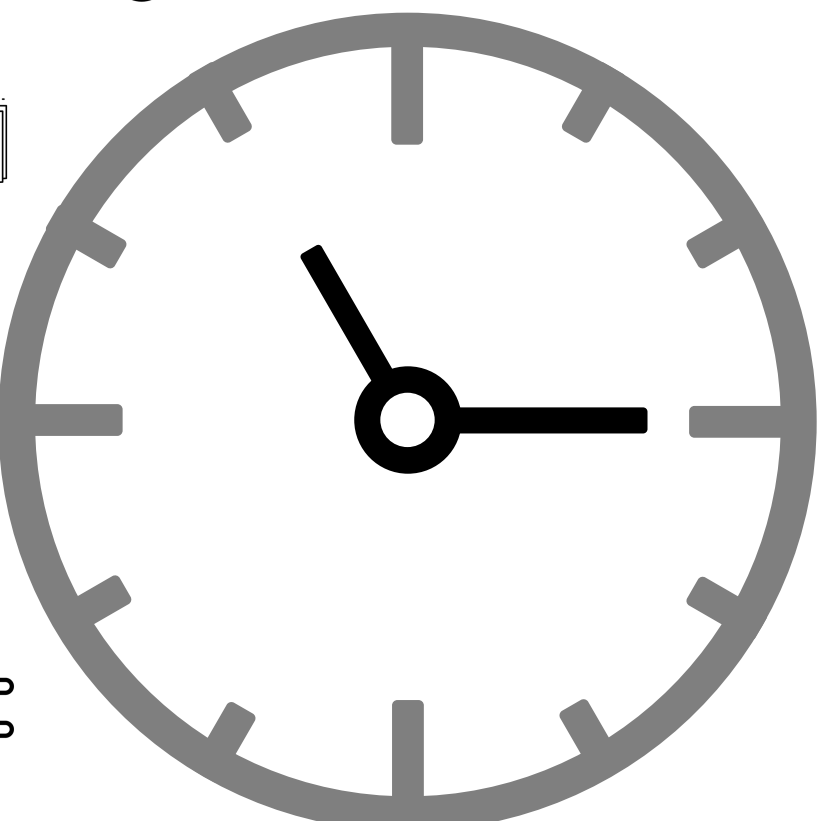


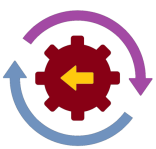
Align Integration open
source technologies
EQUANS

Connecting people,
places and things

(DNA) Data Normalisation
application





(DNA) Data Normalisation Application



Create standard language for all connected systems



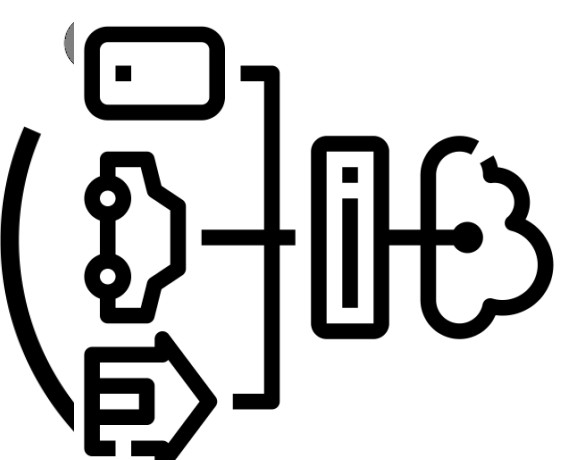
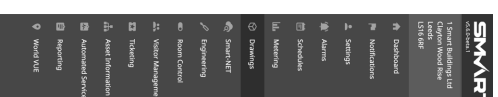
Building API standards for disparate systems



Creating cross functional benefits



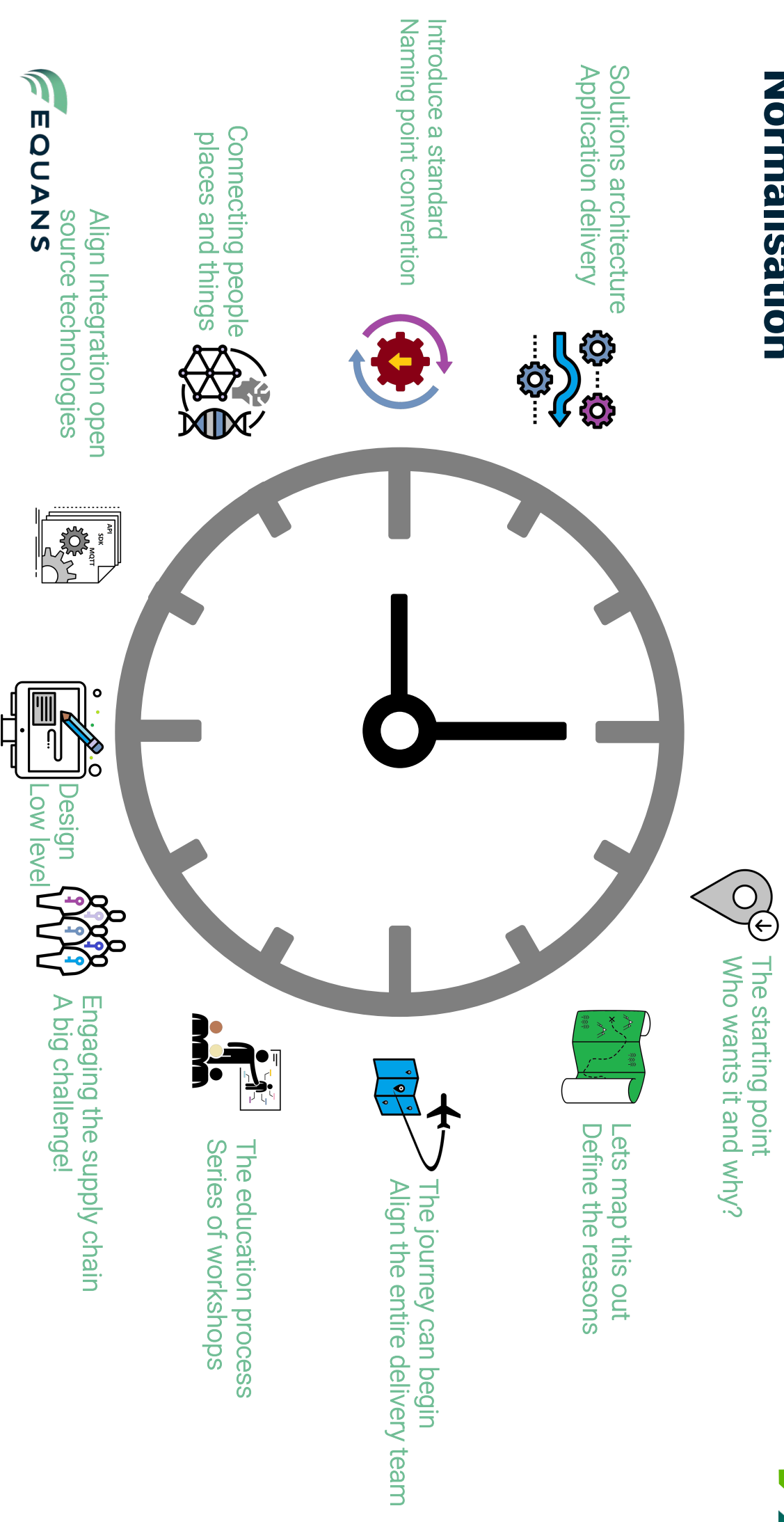
Removing the need for hardware gateways



Creating API's for data
exchange and integration
Disparate Systems



Normalisation





Solutions architects



Where do they come from



A different skill set is emerging

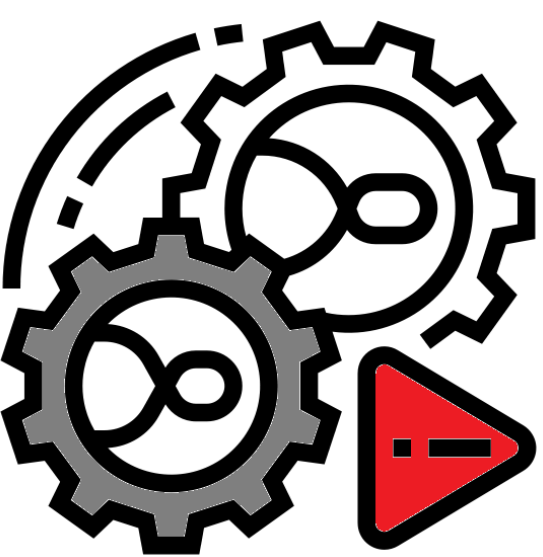


Building Intelligence, connectivity, communications



Driving both CAPEX & OPEX opportunities

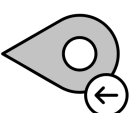
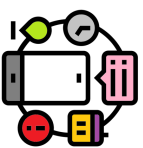
Contractual Savings
Operational Savings



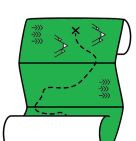


Connected devices

Connected things



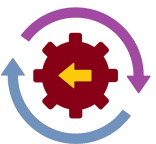
The starting point
Who wants it and why?



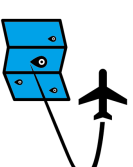
Lets map this out
Define the reasons



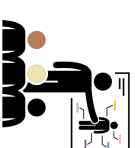
Solutions architecture
Application delivery



Introduce a standard
Naming point convention



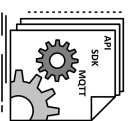
The journey can begin
Align the entire delivery team



The education process
Series of workshops



Connecting people
places and things

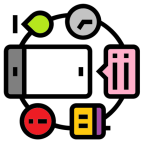


Align Integration open
source technologies



Engaging the supply chain
A big challenge!





Connected things



Edge devices



Wired and wireless technologies

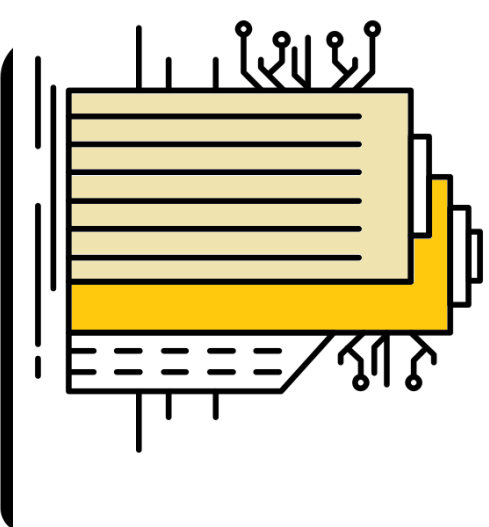


Locate and manage assets



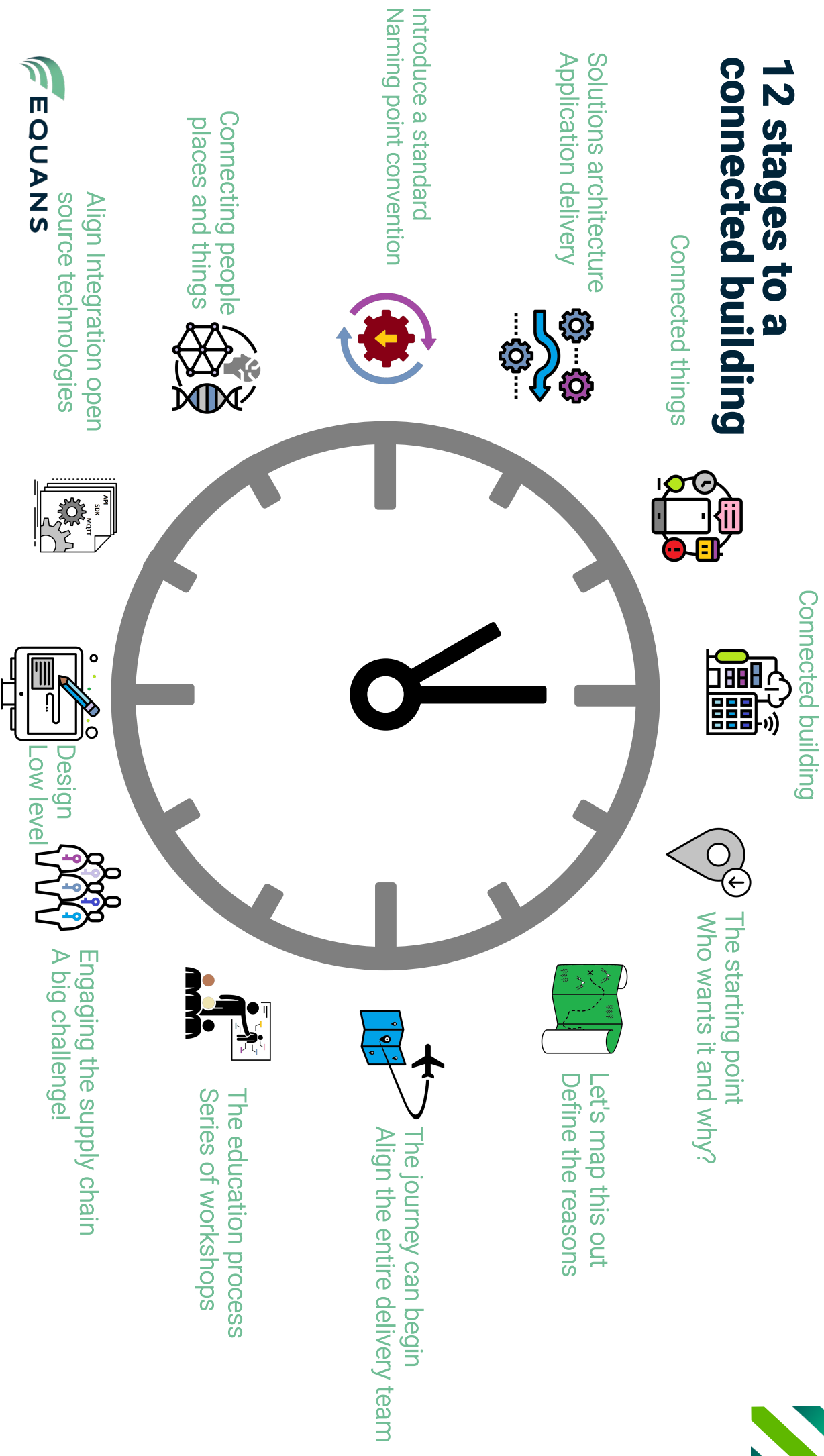
The journey

Things = every thing intelligent, connected, microprocessors are enabling things





12 stages to a connected building





Integrated and connected buildings



Integrating people, places and things



Seamless user journeys



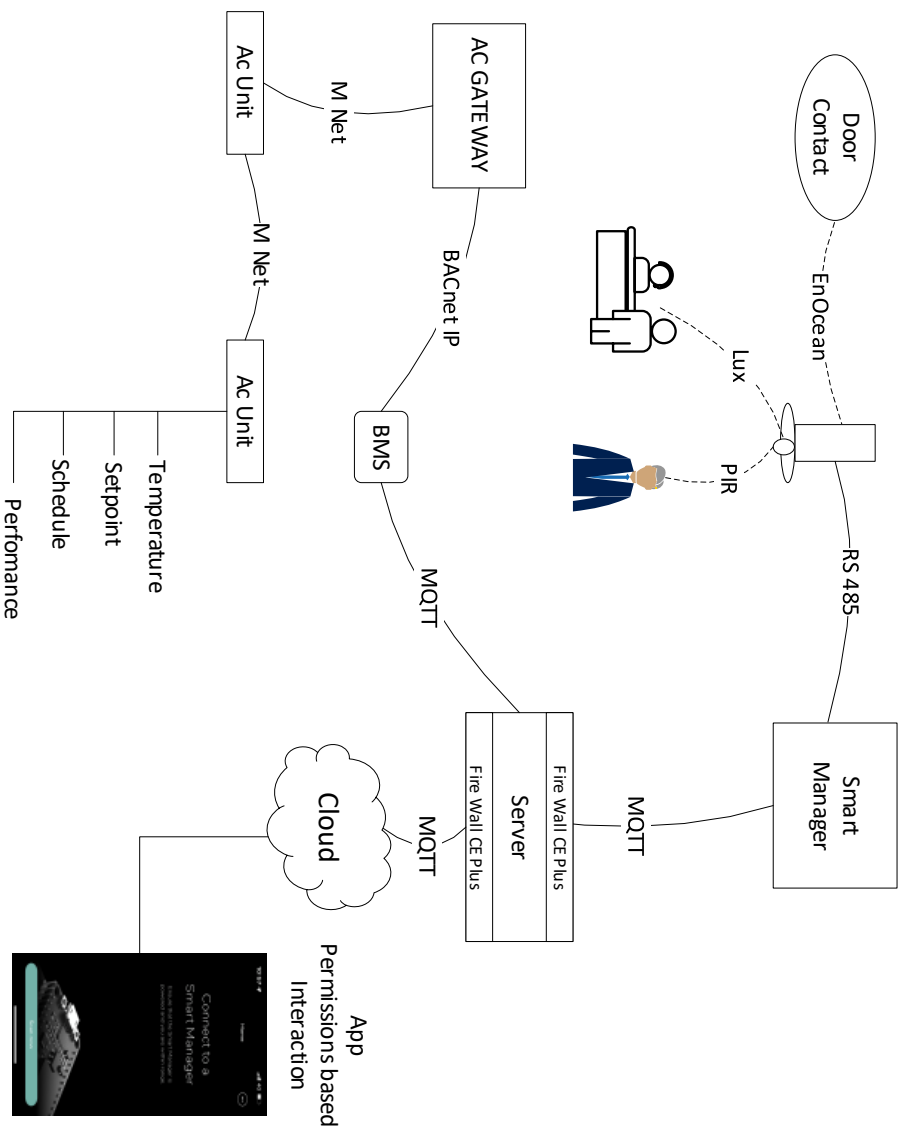
Across multiple disciplines



We have disrupted, we have arrived



Smart Building – cross-functional integration



- Seamless infrastructure
- Multiple protocols
- Managed through 1 network
- Open-source connectivity
- Global standards
- Systems integration
- Less is more
- App based permissions



12

KING STREET

Smart Building application
- the journey



Meet Alice,

an agile worker who works from multiple offices and home. When Alice attends the office though she wants to make sure everything is in place to do so.



Alice receives an email

Alice's client has requested a face-to-face meeting to discuss how the project is going.

Alice uses the Smatr app to book a:

- Meeting Room (with food order)
- Parking spot
- Desk
- Locker

The tech in the background

Smartr

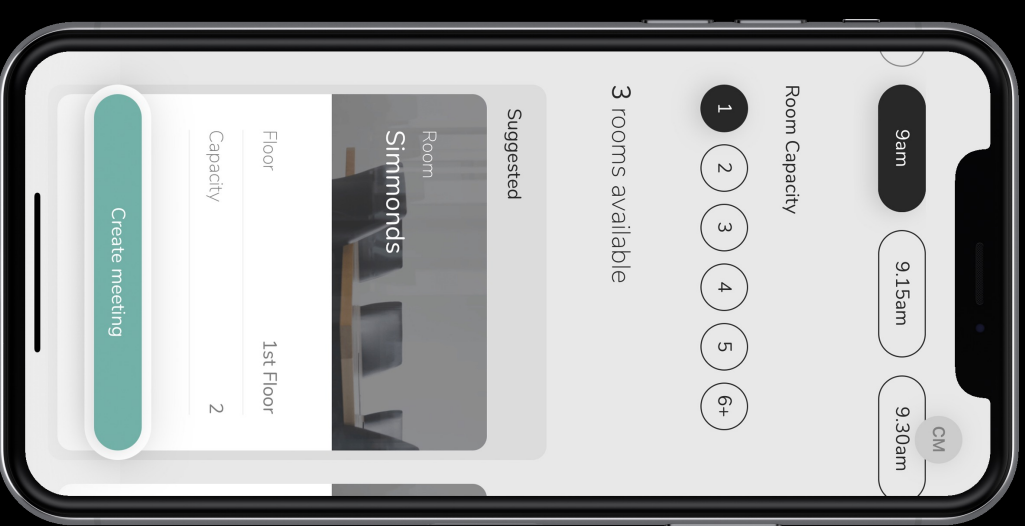
Office 365

Smart Lockers

Access Control

Alice only needs to interact with the Smatr application thanks to all the systems being integrated. Meaning she doesn't have to use multiple apps to make bookings.

7:50 am



Alice arrives at the car park

The barrier will automatically open as Alice's car pulls up. A notification is also sent to her phone as a reminder as to which car park spot is hers.



 SmartR

now

Car Park spot – 2.01

The tech in the background

SmartR

ANPR

Access Control

ANPR reads the number plate and notifies access control to open the barrier. SmartR is then made aware that the user is at the car park and notifies the user of the parking spot.

8:30 am

Alice presents her pass

The access barrier allows for both NFC and QR codes meaning Alice can use her phone as a pass.



The tech in the background

Smatr

Access Control

The Smatr app integrates with Access Control and generates encrypted QR codes that are regenerated every 3 seconds.

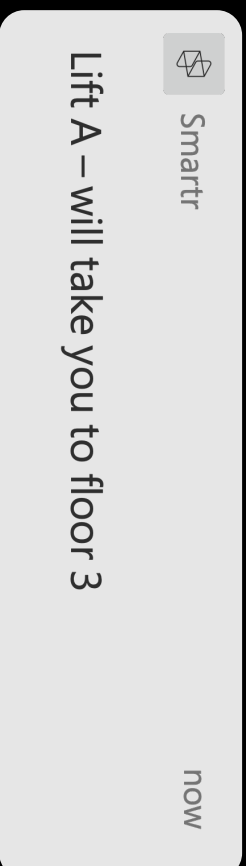
8:35 am





Alice receives a lift notification

As Smatr knows Alice's current location and destination a lift is automatically called when Alice presented her phone to the barrier. A notification is sent to Alice advising which lift to enter.



The tech in the background

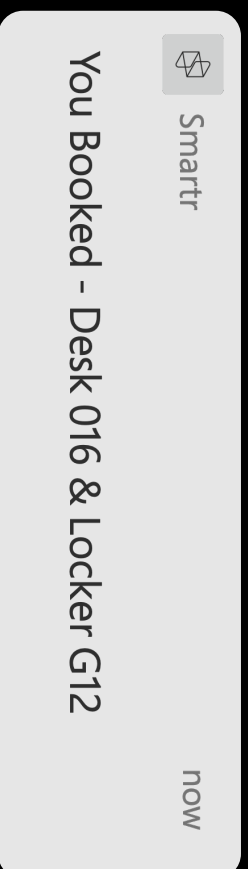


As Alice has presented her pass to access the lift lobby, we know her current location. From there looking at the desk and room booking we can identify what floor she needs to go to. At any point Alice can present her pass at the lift lobby screen and change the floor if required.

8:35 am

Booking reminder notification

Alice receives a notification confirming her seat number. She can also use the Smatr app to view the location of the desk.



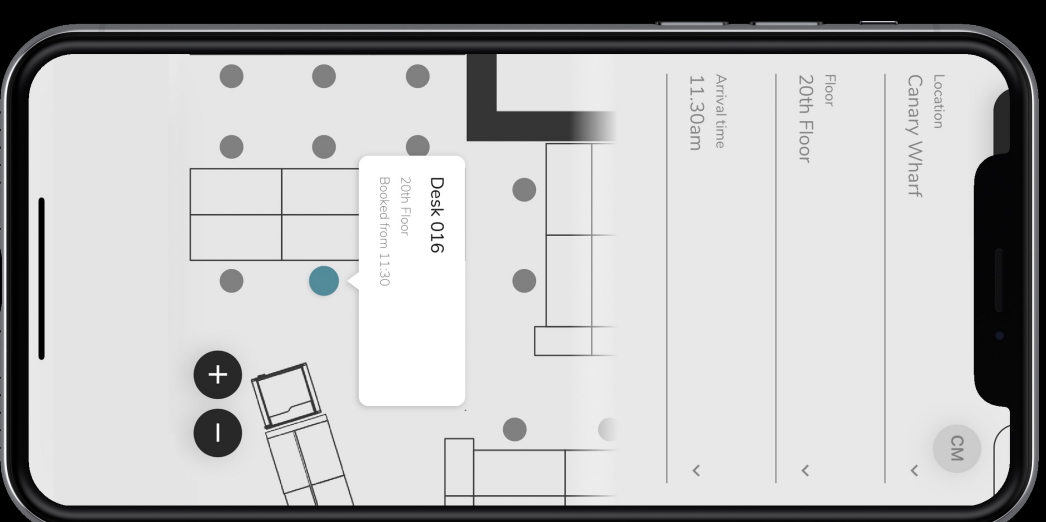
The tech in the background

Smatr

Location Based Services

Smart Lockers

Using Location Based Services (LBS) we can identify that Alice has arrived on the third floor and send a reminder of the desk she has booked.



8:36 am

Way Findings / Maps

Way Finding allows user to see the location they are trying to get to and their current location (imaging google maps for your building)



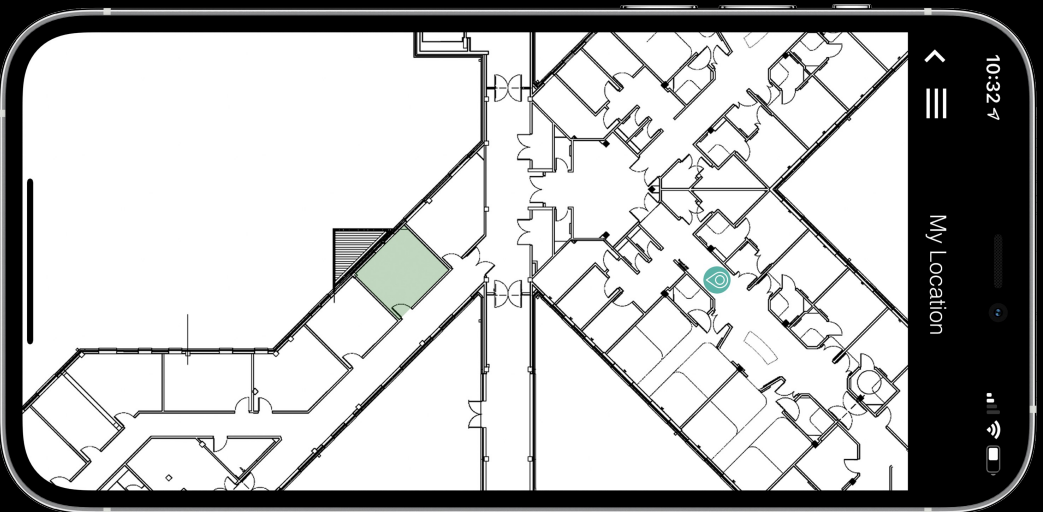
The tech in the background

Smatr

Light Smart

Drawings

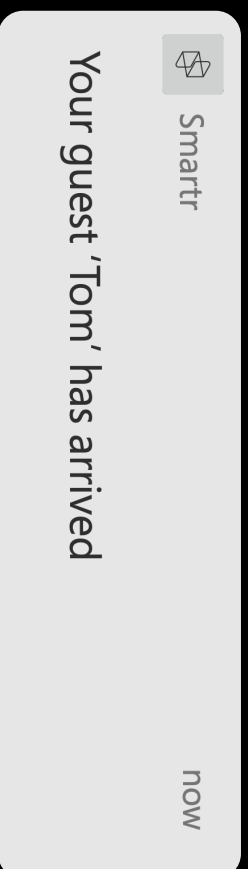
The Smatr application can triangulate the users position by using the Bluetooth beaconing from the Light Smart and reflect this in a user-friendly map.



8:37 am

Host notification

Alice receives a notification confirming her guest has arrived in the building.



The tech in the background

Smarttr

Access Control

When Alice's client presents his pass to the access barrier, she receives a notification that he is in the building and on his way up.

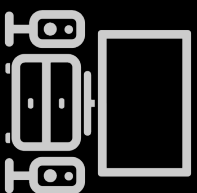
10:55 am





Room Control

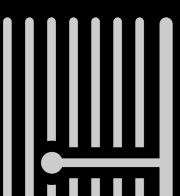
Whilst in the meeting room Alice can control her environment via her Smatr app or on the Smatr in room tablet.



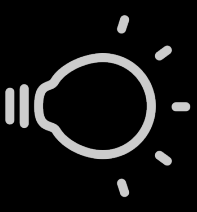
AV



Temperature



Blinds



Lighting

The tech in the background

Smatr

AV

AC/FCU

Blinds

Lighting

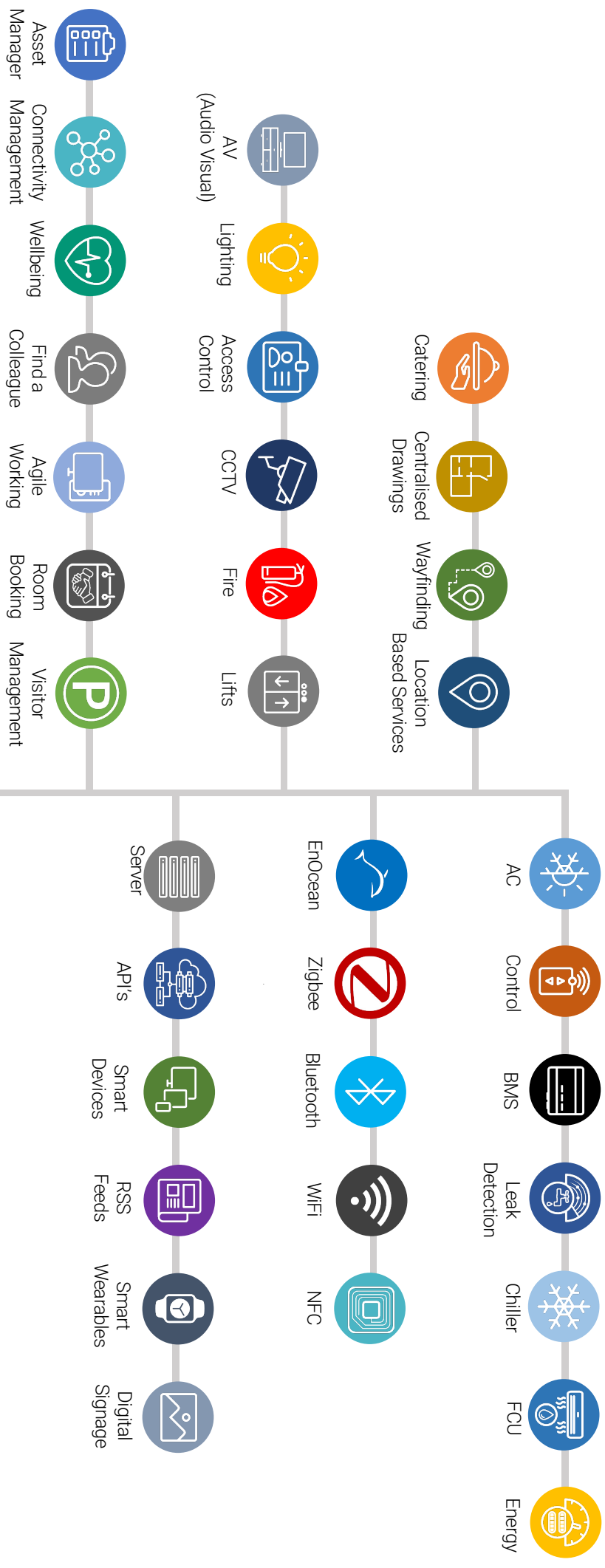
Smatr integrates with AV, BMS, Blinds and Lighting to deliver a simple user interface for Alice to control her environment. This can be done by selecting predefined modes or by personally setting each item.

10:59 am



What does digitalisation connect

People – Places – Things (IOT)



SMARTER



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