Max Buxton

Max is the Manager of IT for Circle Internet Financial, a social payments startup focused on transforming the world economy with technology for storing and sending money.

Prior to joining Circle, he was a Macintosh consultant for close to twenty years, working independently for many years and ultimately joining Call Andy!

In his spare time, he enjoys spending time with his family and motorcycle touring, logging thousands of miles each year.



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CIRCLE

Circle builds mobile apps that enable you to make free, instant, and secure digital money transfers regardless of which country you live in or want to send money to.

Max manages IT for Circle's four offices (Boston, San Francisco, Dublin, and London), utilizing a purely cloud-based infrastructure for a lean, efficient group of solutions.

IoT and Home Automation

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My Own IoT Journey

Why should we listen to you?



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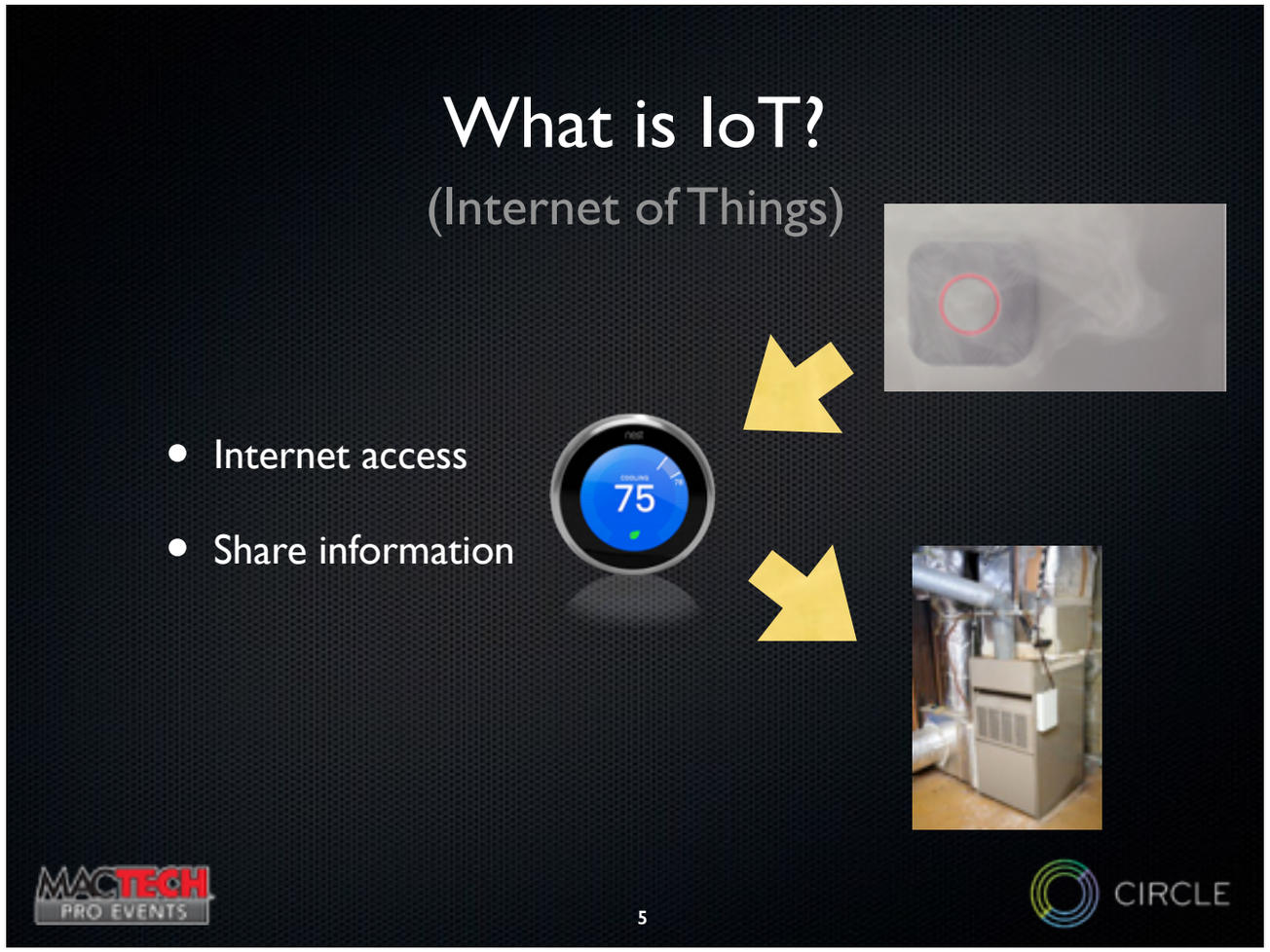
CIRCLE

Slow progress:
- Nest
- Garage door
- Lights

Next:
- Smart switches
- Amazon Echo device
- DIY remote lock

What are we going to cover?

- What's the difference between IoT and smart home
- What's new and what's coming
- Making devices work together
- IoT in your business



Internet of Things

Devices with internet access so they can share information. Like a webcam that lets you know when someone is in your house, or a car that transmits its location to your thermostat…they're devices that get stuff from the internet and send stuff to the internet.

The term IoT was coined in 1999 by Kevin Ashton when he worked for Procter & Gamble to describe devices that talk to each other.

What's a Smart Home Device?

- Subset of IoT
- Automates
- Integrates



Smart Home devices are a subset of IoT that automate things in and around your home. Like smart lights and thermostats that turn on because you came home.

Smart Home & Home Automation

- Lights
- Thermostats
- Switches
- Sensors
- Cameras



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Lights: on/off, color
Thermostats: heating, cooling, ceiling fans
Switches: outlets
Sensors: Water, contact, weather, motion, air quality
Cameras: Point/tilt/zoom, fixed, internet-connected



Siri and Alexa: Voice interfaces for other devices (iPhone/iPad, Echo and Echo Dot)
Google Home: Voice interface and device

Strength of each

Hey Siri:
- Apple's voice assistant
- Part of HomeKit

OK Google:
- Google Home: voice-controlled smart speaker

Alexa:
- The voice assistant for Amazon Echo products
- Alexa (named after the ancient library of Alexandria)

Google Home

- Integrates seamlessly with your Google account and data
- Vast search system



PROS:
- Very good search
- Very good speech recognition
  - Some context awareness: Chain questions together

CONS:
- Only one account (not good in shared family)
- Always listening – Security questions
- Limited assistant functionality
  - Can’t add to calendar
  - Can’t read or create email
  - Only Google Keep for shopping or to do lists

Amazon Echo

- First Mover's Advantage
- Supports a long list of devices and services
- Fast at adding new device support



PROS:

- Multiple devices to choose from
- 3rd party integration: order pizza or an Uber

CONS:

- Always listening - Security
- Limited to local only unless you use a hub, such as Smartthings, Wink, or Astra
- Not whole house audio

Apple's Siri



HomeKit

- Security
- Supports a lot of languages
- Strong device integration



PROS:

- Best security
- Local communications via WiFi only

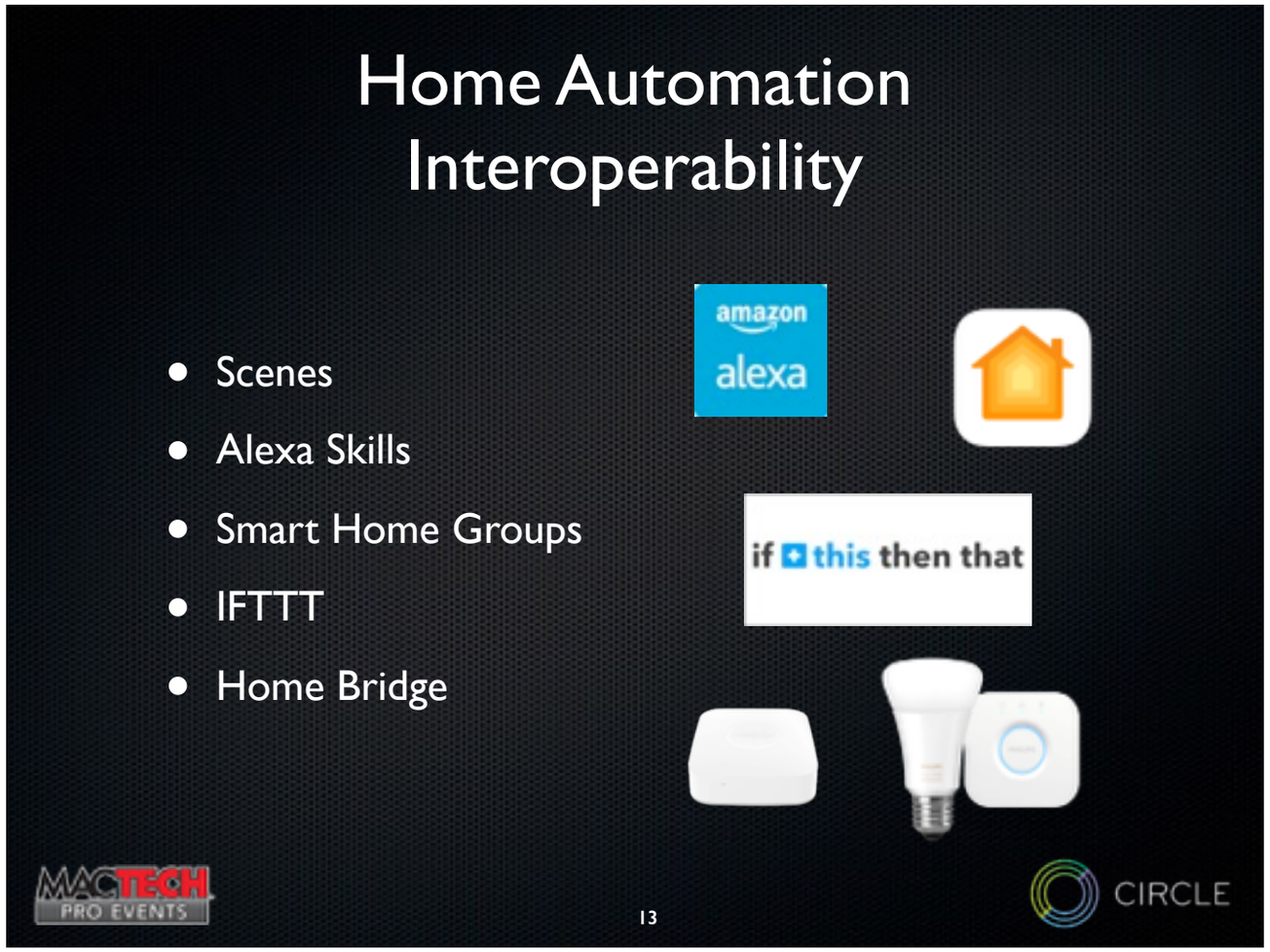
CONS:

- Requires Apple TV or iPad for remote access.
- iPad limited to four devices
- Smart devices are more expensive

The Near Future

- More intelligent voice control
- More “Works with HomeKit” products
- Cameras are coming now
- Better integration with security systems
- Motorized blinds/shades
- Kitchen Appliances





Scenes are actions or groups of actions that can be triggered simultaneously (users of universal remotes will know these as “macros”). That may be as simple as summoning Siri and saying “Good Night,” which triggers the command to shut off your living room lights, turn on the front porch one, and lock your front door.

In the Echo/Alexa world, a skill is like an app. It’s a little program you can add to your Echo/Dot/Tap to enable some new, well, skills. At the time of this writing there were about 8,000 skills in the skill menu of the Alexa app, with more launching every week.

Putting It All Together



Another Holy War?

- Z-Wave
- ZigBee
- Insteon
- Clear Connect
- Works with Nest
- HomeKit
- Wink
- SmartThings
- Phillips Hue
- Lutron Caseta

Many competing protocols

Layers of compatibility

What's in it for me?

- Consultants
  - Understanding client needs
  - Security awareness
- Personal
  - Troubleshooting test bed
  - It's just cool!

See the client's needs in a bigger picture way than just an "IoT/smart home specialist".

Address security: separate SSID?

Personal: Don't forget about the Spousal Approval Factor

IoT for SMB & More

- Partner with Crestron
- “Roll your own” setups with off the shelf gear

Add a smart thermostat for immediate heating and cooling savings

Home Automation Decision Tree

- What do you want to control?
- Anything already in place?
- Protocol
  - Z-Wave or ZigBee
  - Works with Nest
  - HomeKit
- Voice Control
  - Echo
  - Google Home
  - Siri

- What do you want to control?
  - Lights
  - Thermostat
  - Doors
  - Locks
  - Garage doors
  - Sensors
  - Security
  - More?
- Anything Already in place?
- Product choices to meet above determines
  - Protocol
    - Z-Wave
    - ZigBee
    - Works with Nest
    - HomeKit
    - Insteon
    - Clear Connect
  - Voice Control
    - Echo
    - Google Home
    - Siri

Troubleshooting

- HomeKit
  - iCloud and Apple ID
  - Remote Access
- Alexa
  - Skills
  - Wake Word
- Divide and conquer, just like any other trouble shooting issue
- Options Options Options

Resources

- The Wirecutter:
  http://thewirecutter.com/leaderboard/smart-home/
- PC Mag The Best Smart Home Devices of 2017:
  http://www.pcmag.com/article2/0,2817,2410889,00.asp
- HomeBridge:
  https://github.com/nfarina/homebridge
- Beauty and the Beast, Still a Cautionary Tale About the Smart Home:
  https://www.wired.com/2017/03/beauty-and-the-beast-smart-home/
- How to Make a Smartphone Connected Lock:
  https://www.youtube.com/watch?v=bAcK80fm1_0

Questions?



Max Buxton
mbuxton@circle.com

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