



The IoT Inc Business Meetup Silicon Valley

Meeting 7

Join us on March 5 at 6PM (PST)

Future-Proofing
Your IoT Business Model

Todd Greene
PubNub



IoT Inc. Meetup

March 2015

Bruce Sinclair (Organizer): bruce@iot-inc.com

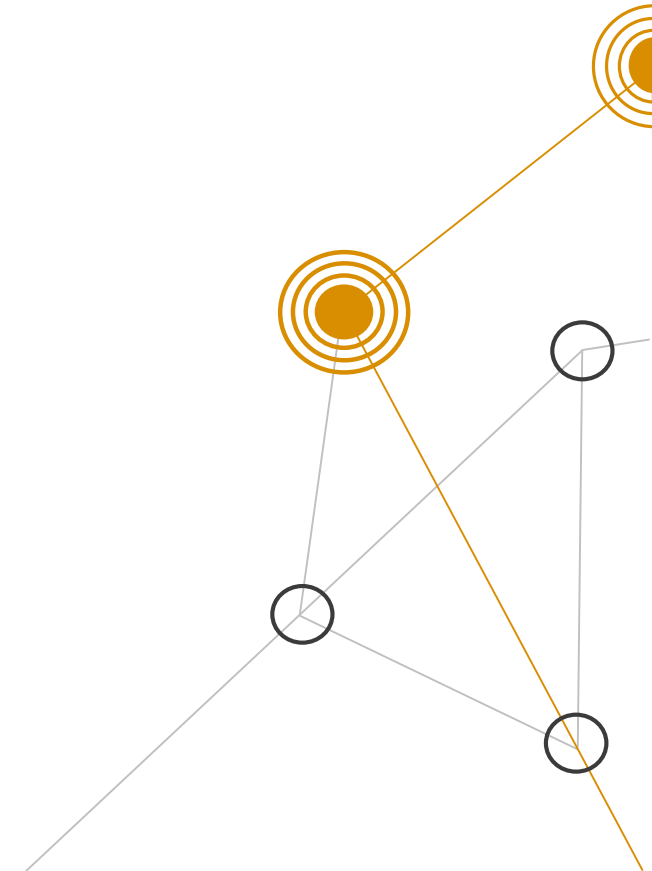


Target of Meetup

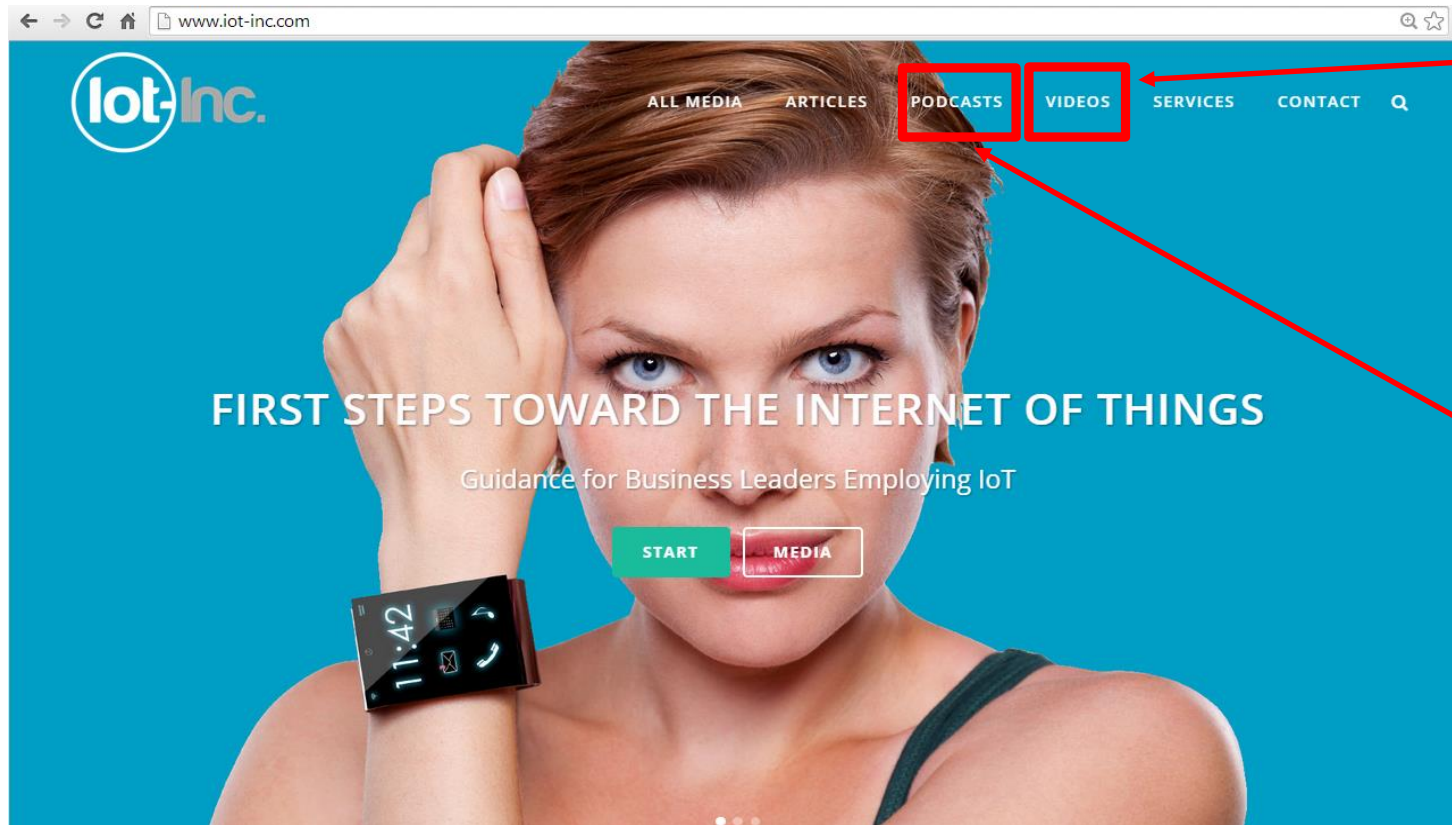
For business people selling products and services into IoT
but of course everyone else is welcome: techies, end-users, ...

Focus of presentations and discussions:

Business Models
Support
Marketing
Sales
Distribution
Finance
Post Sales
Pre Sales



More on IoT Business



<http://www.iot-inc.com>

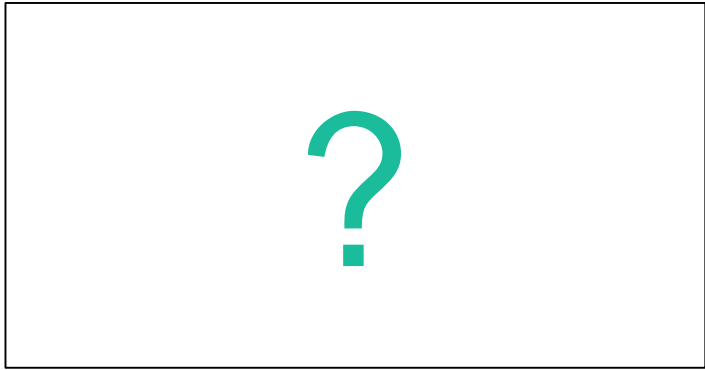


<https://www.youtube.com/user/loTIncBusiness>



<http://bit.ly/iot-iTunes>

Notes

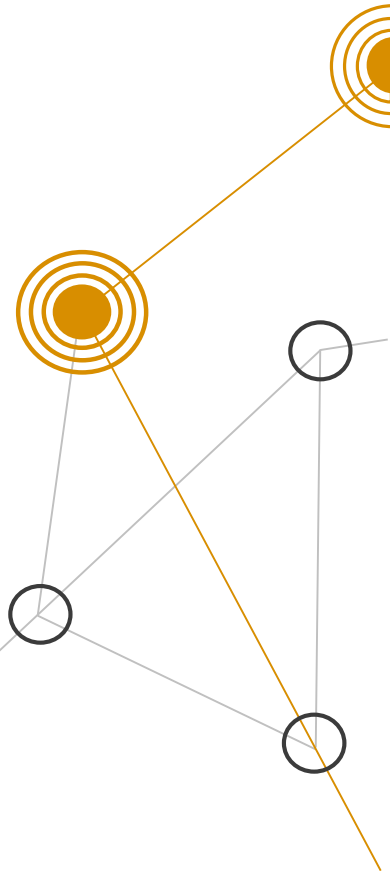


Next Meeting

- Looking for a VC that passionate about IoT or IoT Cloud services company or IoT Analytics company
- Send me an email at bruce@iot-inc if you're interested helping with live streaming during the meeting
- Will send an email within a week with Todd's presentation... To receive the message your account must subscribed to receive "Organizer special announcements"



May Meeting



Join us on March 5 at 6PM (PST)



Future-Proofing

Your IoT Business Model

Todd Greene

PubNub

Future-Proofing IoT Business Models

Todd Greene
CEO, PubNub

PubNub

PubNub

is a Data Stream Network for

Secure

Low Latency

Reliable

IoT Communication

to/from every device in the world

The Evolution of Global Networks

Data Stream Networks

PubNub

Services

Data Streams
Storage/Sync
Syndication

Presence
Visualization
Gateways

Protocols

WebSockets
COMET/BOSH
HTTP 2.0
MQTT

HTTP/Content Delivery Networks



Services

Caching
QoS

Security
Redundancy
VPN

Protocols

HTTP
HTTPS
SPDY

Internet Backbone Networks



Services

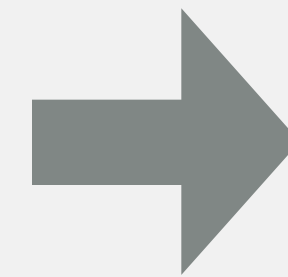
Peering
Routing
POPs

Protocols

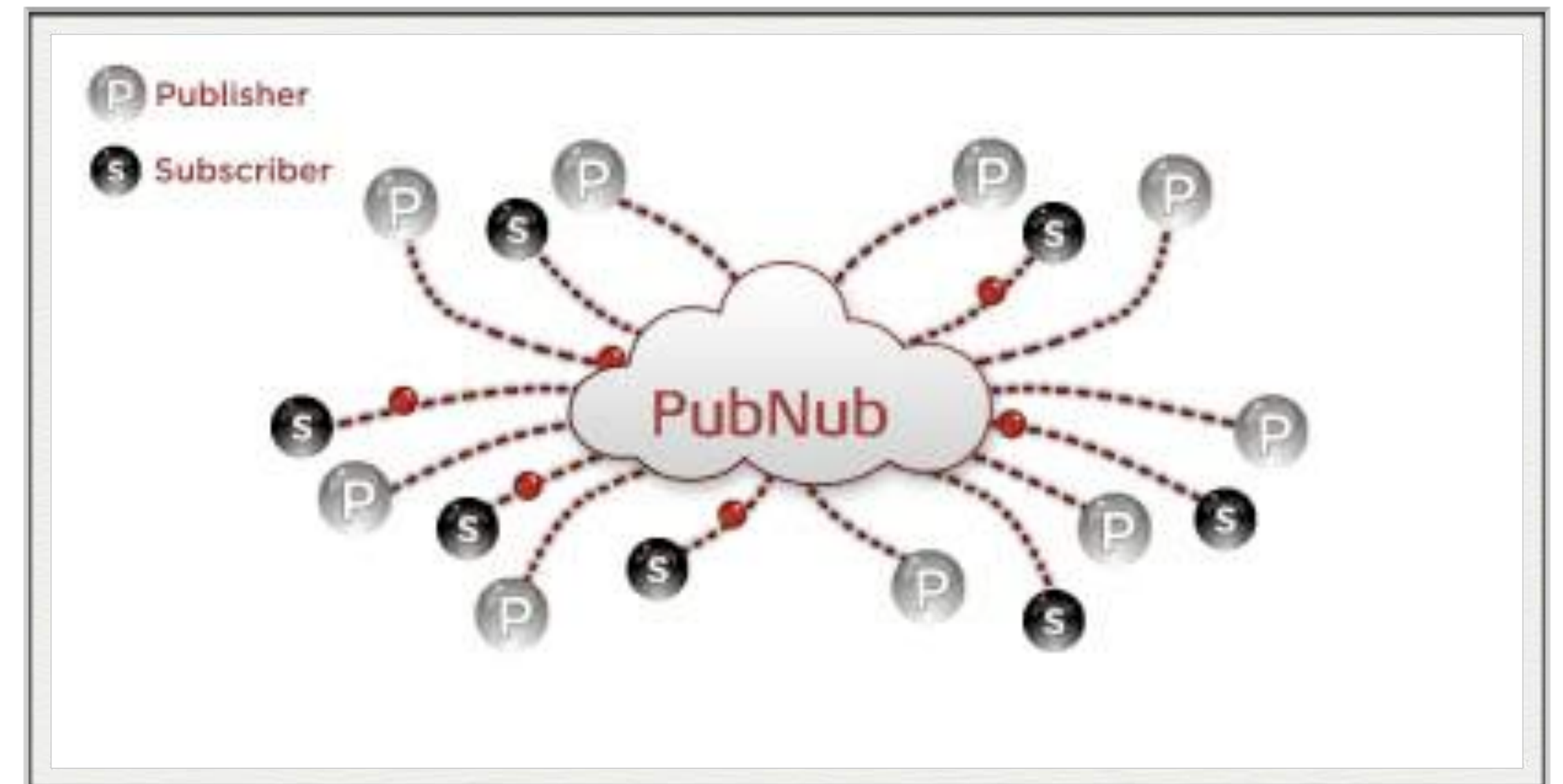
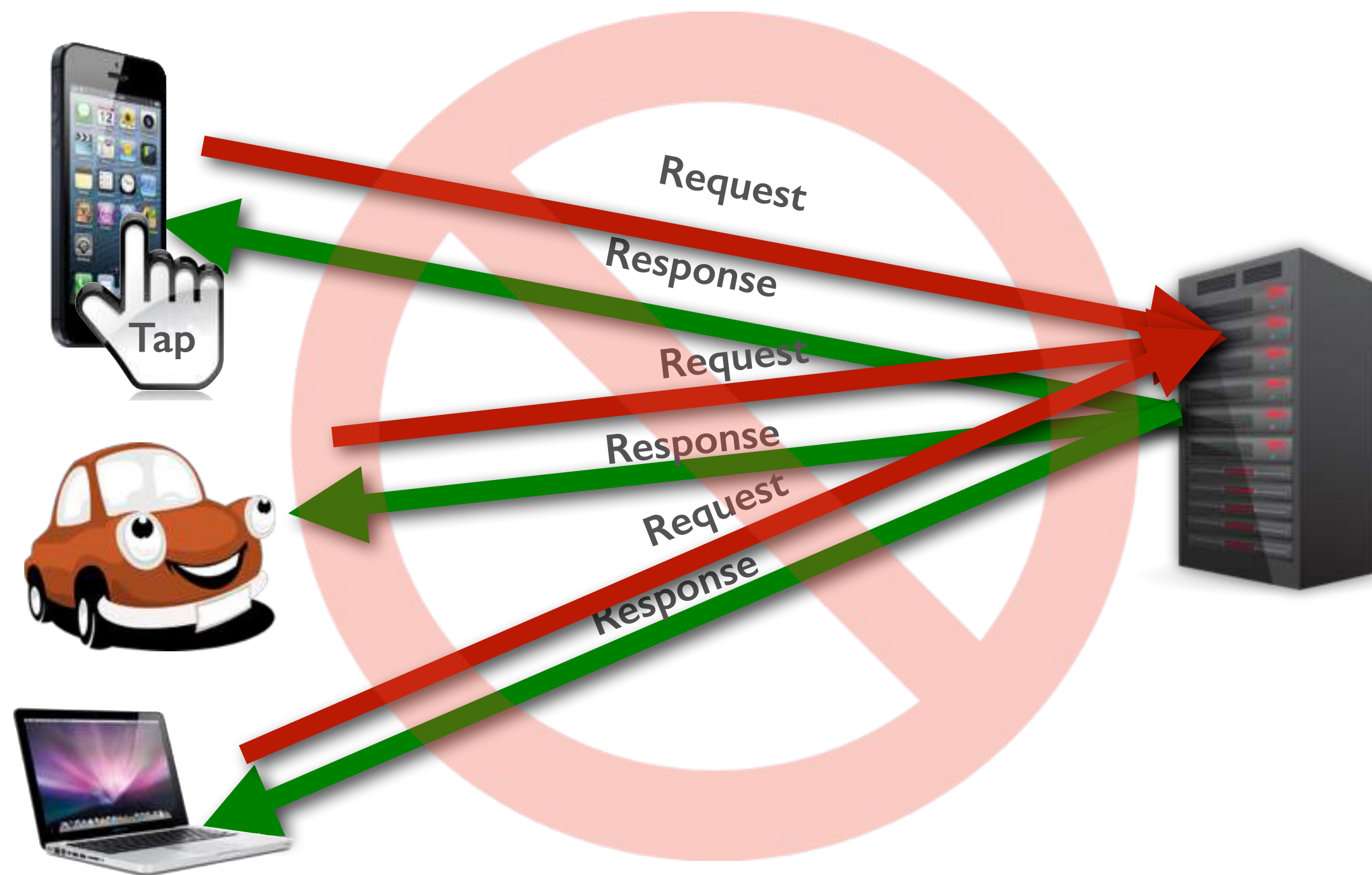
TCP
UDP
IP

From REST to Data Streams

Request/Response (REST)



Data Streams



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Why Does A Data Stream Network Matter?

Secure Connectivity

Bi-directional, encrypted signaling anywhere on the globe.

- Message delivery in under 1/4 second
- Works seamlessly without port forwarding
- Data catch-up on spotty wireless networks
- Eliminates open network ports

Presence Detection

Instant detection and notification of presence/connection status.

- Instant Connect/Disconnect events
- History of device connectivity status for audit
- Realtime updates of location, battery, etc.

Time to Market

Focus on the application, not the global infrastructure.

- Out-of-the-box access from over 60 programming environments
- Simple, straightforward API
- Pricing model that scales with the business

Future-Proofing IoT Business Models

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“IoT” is a big umbrella

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Sensors



Smart Home



Wearables



We often categorize IoT by Industry...



Transportation



Medical



Manufacturing

Categorizing IoT Business Models

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Operational Efficiencies/Cost Reduction



Monitor/Improve Customer Experience



New Revenue Streams

Operational Efficiencies/Cost Reduction



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Operational Efficiencies/Cost Reduction



- Business Model is Clear
- Time-to-market not always an issue
- Fewer cost concerns
- An evolving, maturing market

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Monitor/Improve Customer Experience



PubNub

Monitor/Improve Customer Experience



- One-time revenue, but ongoing costs
- Often becomes a cost center
- Consumer feature usage isn't guaranteed
- Promise of valuable data isn't always realized

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New Revenue Streams



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New Revenue Streams



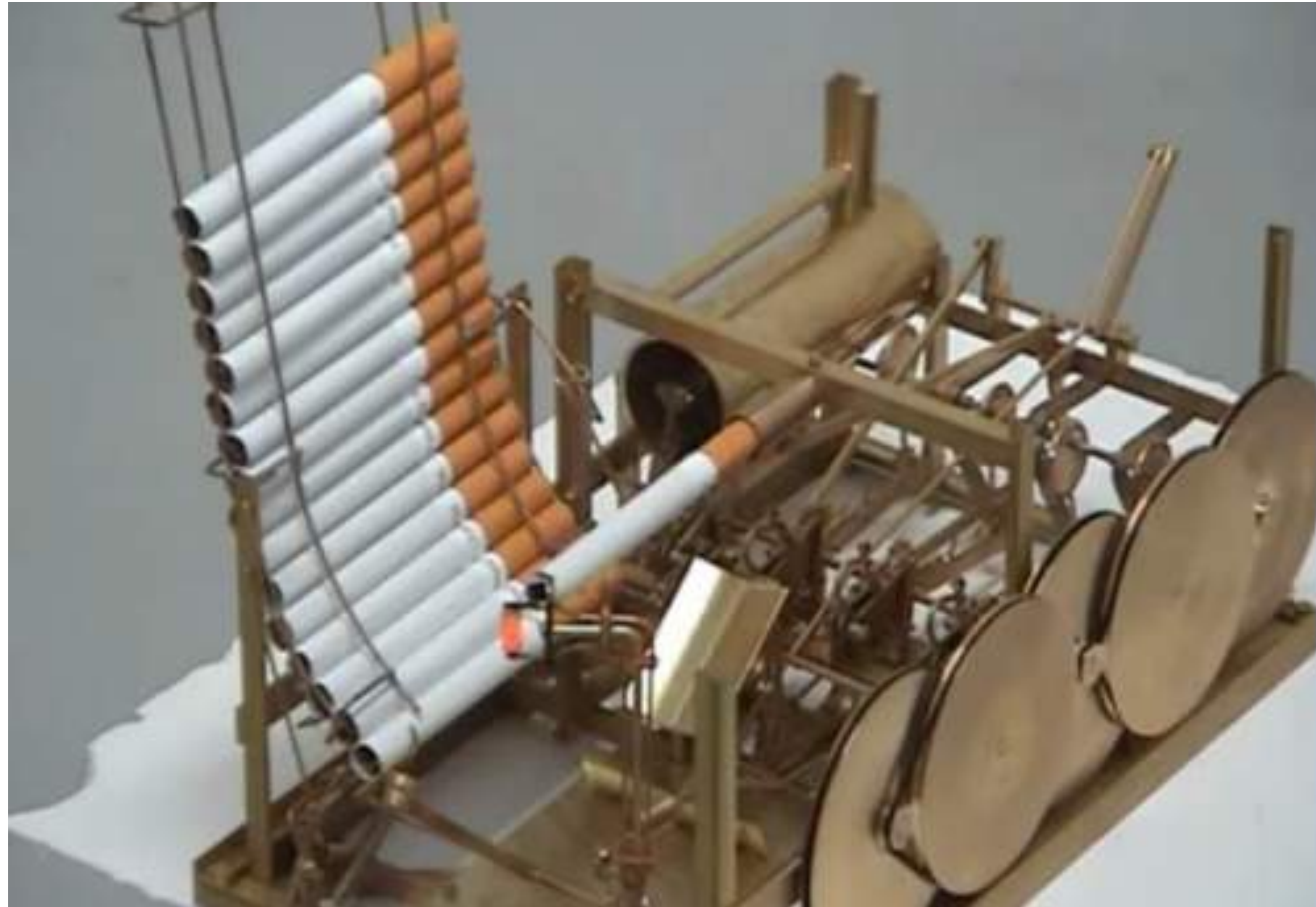
- Realtime ability to uncover opportunities to monetize
- Deliver subscription services due to high-enough perceived value
- Ability to syndicate IoT data to constituents willing to pay
- Drive marketing dollars based on realtime data coming from IoT

PubNub

Future-proofing the Business Model

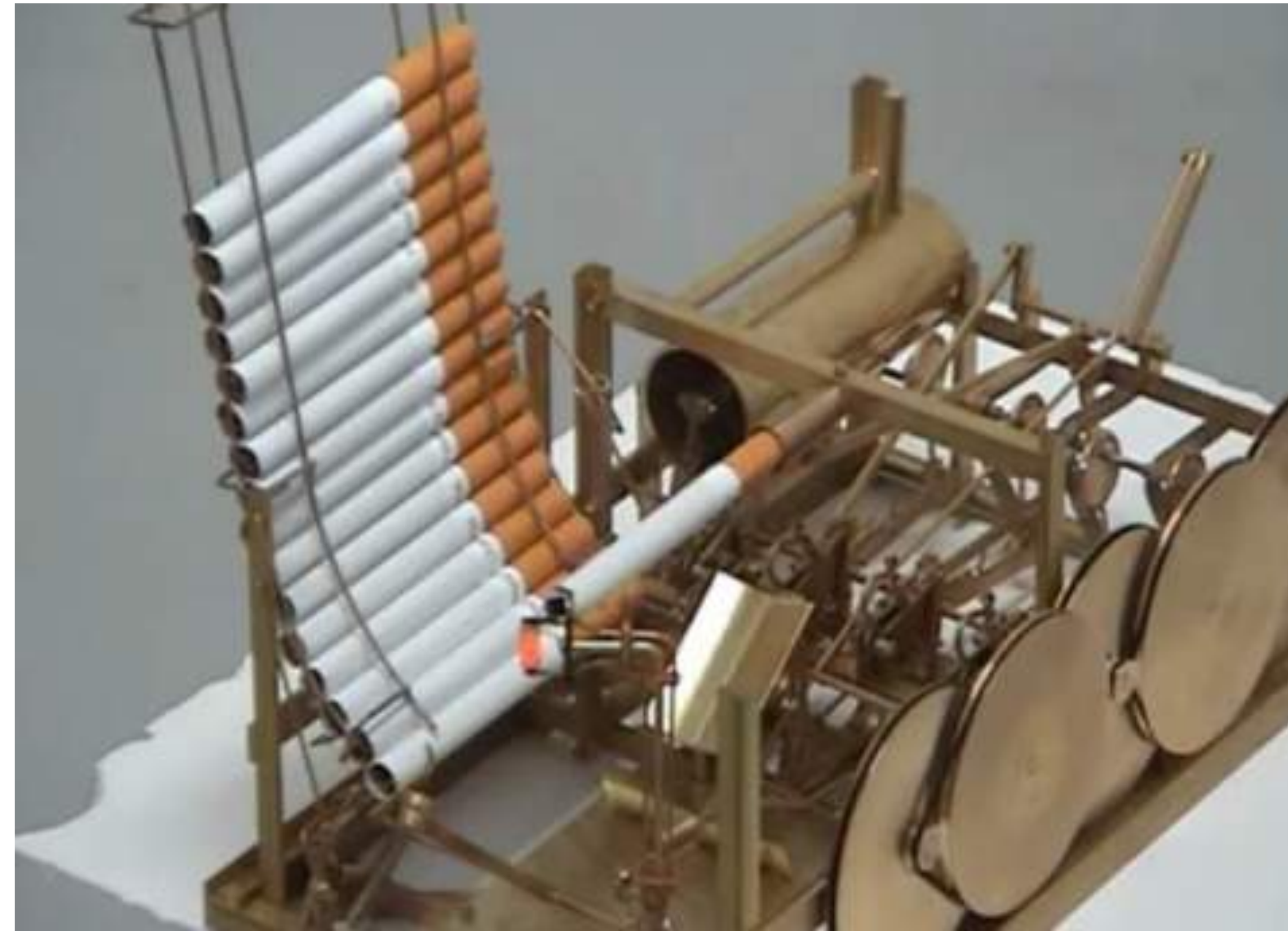
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So You've Invented the Next Big IoT Product

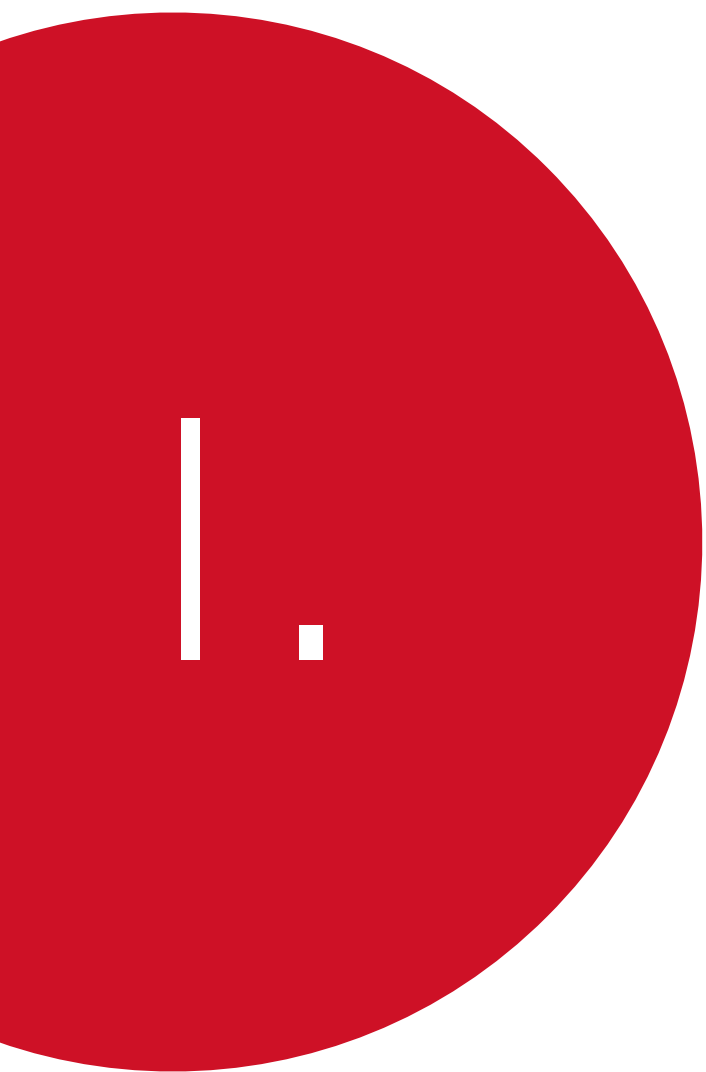


So You've Invented the Next Big IoT Product

- It's selling like crazy
- Great reviews, lots of love
- It has perceived customer value
- Your investors are happy



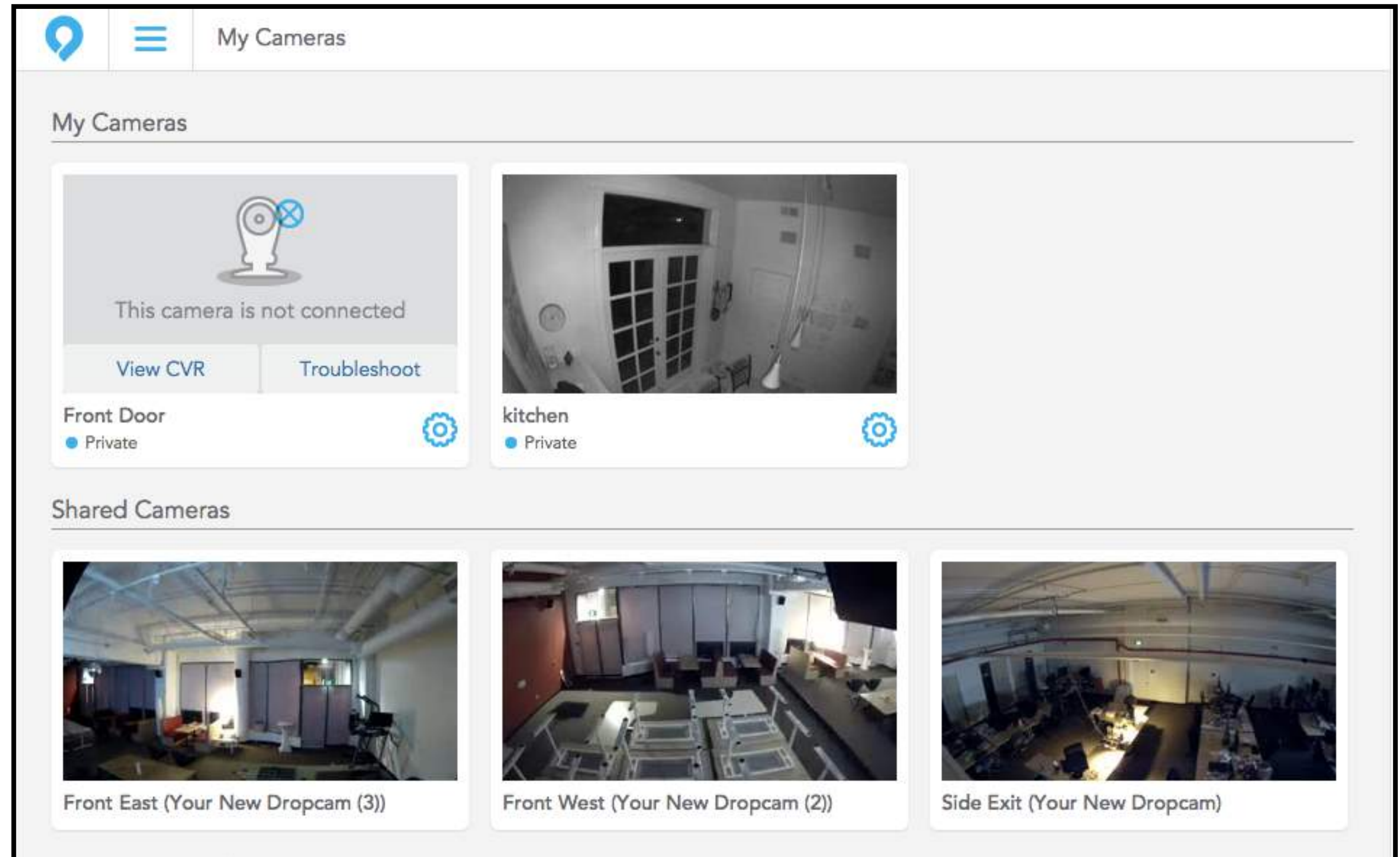
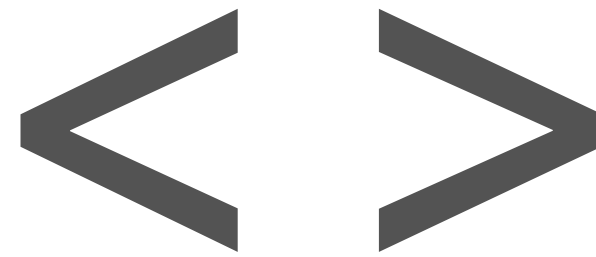
How do you go from fad to longevity?



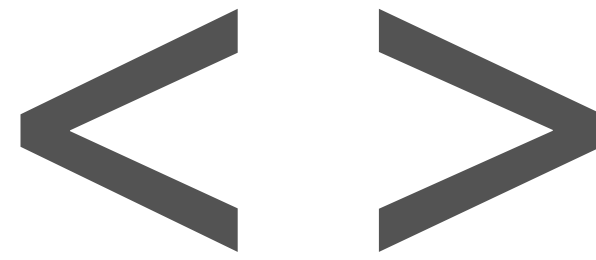
Realization:

*You are selling a service...
not hardware.*

Which part does the consumer care about?

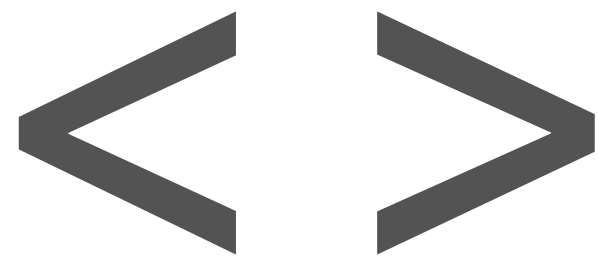


Which part does the consumer care about?



The screenshot shows the Fitbit web dashboard. At the top, the Fitbit logo is on the left, and navigation links for 'Dashboard', 'Log', 'Community', 'Premium', and 'STORE' are in the center. On the right, there are icons for a dog, a speech bubble, and a gear. Below the navigation bar, the date 'TODAY August 10' is displayed. The main content area is divided into several sections: 'Weight / lbs' with a gauge showing '2.7 lbs to go'; 'Calories' with a green gauge showing '3241 Champ!'; 'Food Plan' with a circular progress indicator; 'Friends' with a list showing 'You' with 182,893 steps (rank 1) and 'Linda' with 131,700 steps (rank 2); 'Calories In v. Out' with a gauge showing a balance; and a 'Premium' section with a bar chart and the text 'Need motivation to move more?'. On the right side, a settings menu is open, showing 'One Tracker' (5 mins ago), 'Aria Scale' (5 hrs ago), 'Settings', 'Help', 'Log Out', 'Dashboard - Beta', and 'Normal Dashboard'.

Which part does the consumer care about?



Difficult Truths to Accept

I've got a feeling we're not a hardware company anymore

- Your hardware is disposable
(or at least upgradable/swappable!)
- It's the service and data that matters
- Recurring revenue means delivering ongoing value and improvements
- The online experience must be as beautiful as the hardware

Is Your Organization Ready?

How much investment is made into software design?

Is marketing promoting the right aspects of the product?

Do you have policies for data retention & transfer?

Is the software/service designed for future hardware?

Do you understand SaaS metrics and business models?



2.

Realization:

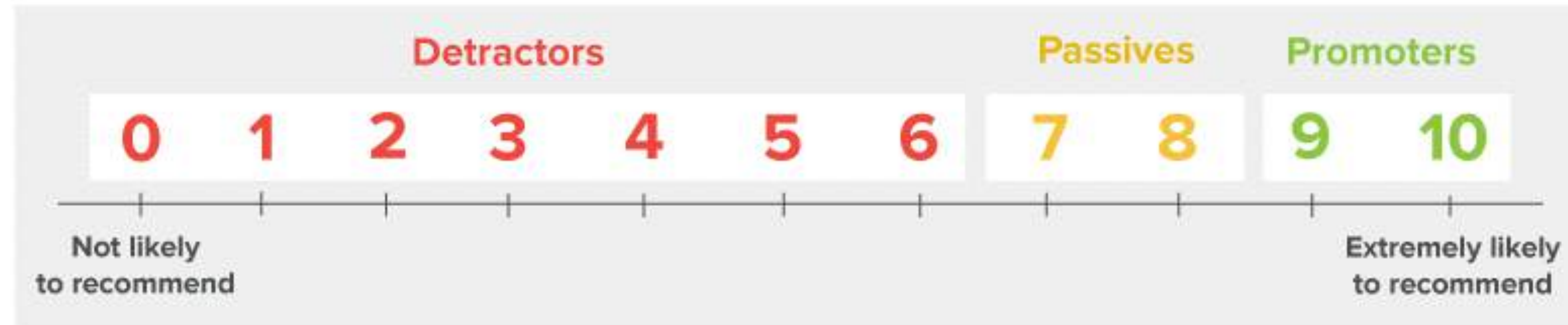
*It takes a new company culture
to drive customer success.*

Customer can Cancel at any Time

- The out-of-box experience will determine conversion-to-pay rate
- Firmware upgrades can't be manual
- The perceived value must grow over time
- Need both reactive support and proactive outreach
- Measure customer experience regularly



Drive Business Through NPS & SaaS Metrics



$$\text{NPS} = \% \text{ 😊} - \% \text{ 😞}$$

Measure NPS by geography, user types, user longevity, and other criteria

Do extensive upgrade, downgrade, and churn analysis and cohort tracking

Closely tie Product Management priorities to improve NPS and Churn

Track internal support tickets in aggregate to uncover issues early

Provisioning and Firmware Upgrades

Provisions via easy mobile app

Firmware upgrades invisible

New features drive Surprise
and Delight (screencast,
wallpapers, etc.)



Setup is kludgy and
non-standard

Firmware upgrades manual,
almost never occur

Router never tells you what's
wrong

Typical Wireless Router



Is Your Organization Ready? (Part II)

Is your support team aligned with a Customer Success mindset? (It's not a one-time interaction any more)

Is your billing system & team aligned with Customer Success initiatives?

Are you continually marketing to existing customers (not just upsell, but to promote continued usage?)

Do you have a good data science team?



3.

Realization:

*Global expansion takes
local knowledge.*

Know Local Laws & Policies



Understand Payment, Pricing & Tech in Geos

- Can you successfully monetize your IoT product in a specific region?
- What is an acceptable price point based on local perceived value?
- Can you prevent registration in cheap geo and usage in more expensive geo?
- What forms of payments are typical in a given geo?
- Can you provision & upgrade in same way? (USB ports as available? Bandwidth costs higher?)
- Are there cultural differences that require product alterations?

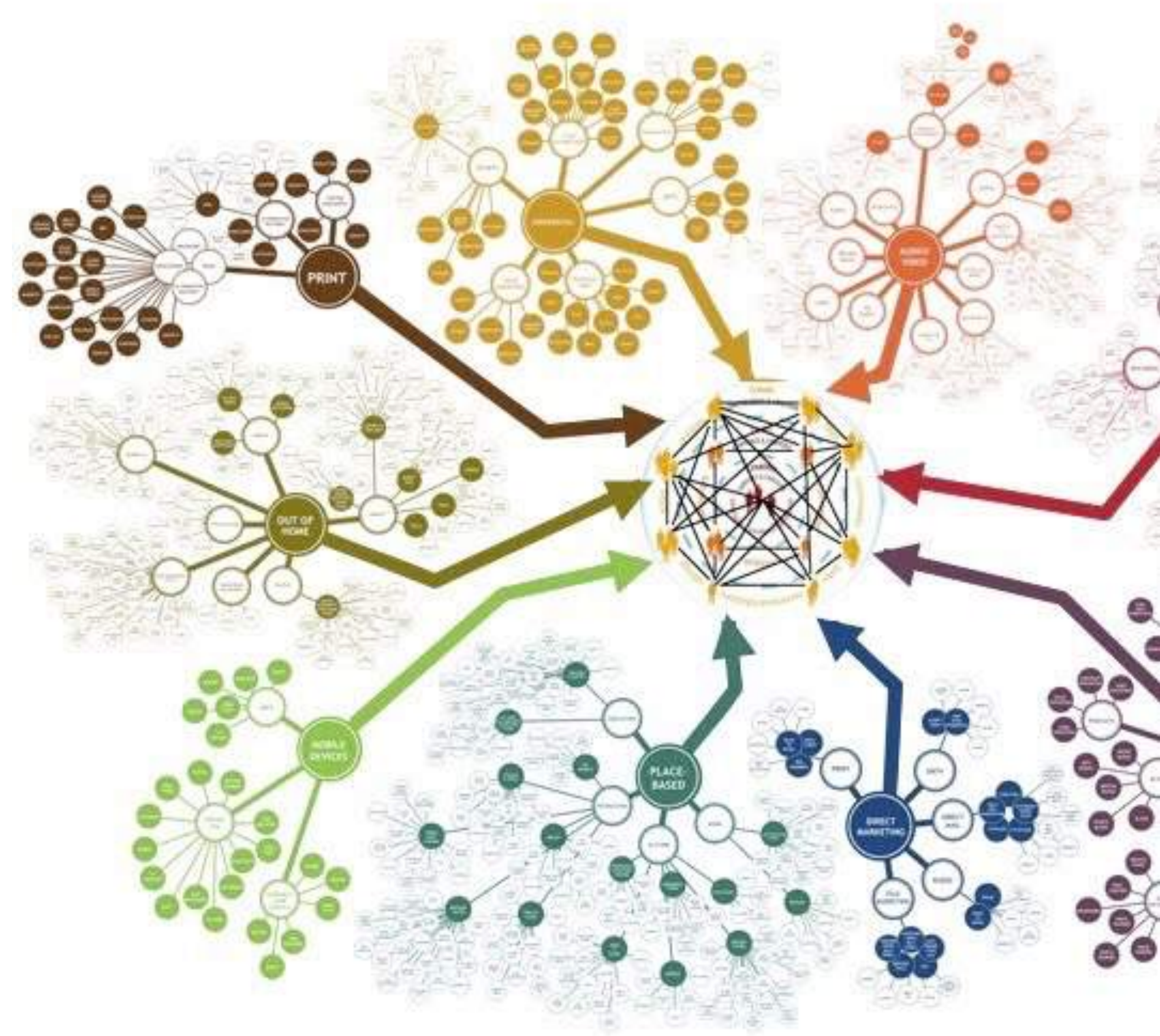
4.

Realization:

*It takes an ecosystem...
there's little success going solo.*

Creating an Ecosystem

- Provide API access (with customer permission) for 3rd parties to build on your data
- Develop partners that will pay for access to your data
- Define a “standard” way to push 3rd party data into your portal.



Joining Ecosystems & Interoperability

Open vs.
Proprietary
Ecosystems



OPEN
INTERCONNECT
CONSORTIUMSM



How much control
do you give up to
the Ecosystem
Owner?



HomeKit



HealthKit

Data Stream Syndication to Partners

Think hard about ways to monetize the data, one-off and in aggregate

Create license terms to allow for data syndication

Ensure you have a tight security model (use a 3rd party to help syndicate!)

Design a system for easy onboard / blocking of business partners



Some Data Syndication Examples



Smart home companies selling data to insurance companies



Cargo ship port arrival data publishes to financial trading systems



Vehicle location & speed to traffic monitoring systems

5.

Realization:

*Security breaches & scaling issues
will kill you.*

Encryption

Device Network
Vulnerability

Provisioning

Device Physical
Vulnerability

Data Access Control



Data Retention
& Privacy

Firmware Updates

Legislative
Compliance

Nonrepudiation

Unrealistic to expect hardened security

if each team has to design, build, and test from scratch.



“To improve security I used a two-factor authentication on my account: my social security number and my credit card number.”

Craig Heffner discovers attack vector via common chipsets
embedded in millions of home routers (DEFCON 18)

Oct 2010

Target (retailer) data breach reportedly originated
thru HVAC Vendor

Nov 15, 2013

Hundreds of TrendNet “Secure” Camera Feeds for Home
Security, Baby Monitoring Were Hacked, Posted Online

Sept 4, 2014

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Dire Need to Mature the IoT Stack

Web/Mobile Dev

Well-understood Tech Stack

Incorporates Security Models

CDNs for Handling Scale

Interoperable Standards &
Vendors

IoT Development

Invent for each project

Security left to developers

No codified scaling approach

Proprietary Platforms &
Vendors



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How IoT Products are Implemented

Failed Approaches



Custom Built

Custom
Top-to-bottom
architectures

Professional
Services Heavy

Hard to upgrade

Leveraging a Stack

Competitive &
Cost Pressures

Time to Market
is critical

Leveraging the
emerging
IoT Stack

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Layers of the IoT Stack

Analytics and Insights

Data Collection / Processing

Internet Data Streams

Local Area Communication & Gateways

Hardware and Chipsets

IoT

STREAM CONFERENCE

Defining the Stack for IoT

Hackathon: April 18th, 2015

Workshops: April 22nd & 24th, 2015

Conference: April 23rd, 2015

Bently Reserve, San Francisco

<http://streamconf.com>

Summary

PubNub

1.

You're selling a **service**, not hardware

2.

New **culture** must drive customer success

3.

Global expansion takes **local knowledge**

4.

It's all about the **ecosystem**

5.

Failing at **Security** or **Scaling** will kill you

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Thank You

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