

Architecting for Digital Disruption

Midwest Architecture Conference

November 9, 2017

Joel Crabb

VP, Architecture and Chief Architect
Target



Transforming Big Box Retail to Digital Retail





[categories](#) ▾

[deals](#) ▾

[my account](#) ▾
hello, Joel

[3 items](#)

meet two of our newest brands, only at Target



A New Day

a · n · d
e a
w y ?



Goodfellow & Co

Gartner.

SYMPOSIUM | ITXPO®

Take a look at this recent research report, **“Digital Disruption and the New Disruptors: Recognize, Prioritize and Respond — A Gartner Trend Insight Report,”** and learn how to recognize,



7034 WHITEPAPERS
FROM 486 COMPANIES

Digital Disruption: Have You Been Disrupted Yet?

HBR WEBINAR

AUG 18 @ NOON US ET

**Crossing the
Digital Divide**

**The 5 keys to
True Digital Disruption**

Get the free ebook

RETAIL executive
DIGITAL EDITION

Leadership Lessons

Disrupt Or Be Disrupted: Leadership In The Digital Age

**Application
Architecture Summit**

An Online
Conference

Sept 21, 2017

**Modern Application Development
for Digital Business**

Title: Application Architecture Conference

Date/Time: Sept 21, 2017 (An Online Conference - 10am PT / 1pm ET)

Expert Service. Unbeatable Price.

W



free shipping



PRODUCTS BRANDS DEALS SERVICES

Best Buy ▶ Customer Service ▶ Help

FREE SHIPPING



Does My Order Qualify for Free Shipping?

Orders \$35 and up* ship right to your door for free. Qualifying items will display in your Cart, along with an estimated date of arrival.

[See additional shipping options >](#)

2010: Pre-Digital Thinking

September 12, 2001

Amazon and Target Forge E-tail Partnership

<http://www.ecommercetimes.com/story/13470.html>

By Keith Regan

Sep 12, 2001 9:26 AM PT

August 24, 2011

Target (finally) parts ways with Amazon, but retailer's new site sputters at launch

The GeekWire logo is displayed in a dark grey rectangular box. The word "Geek" is in orange and "Wire" is in white.

BY **JOHN COOK** on August 24, 2011 at 10:47 am

<https://www.geekwire.com/2011/target-finally-parts-ways-amazoncom-retailers-web-site-launch-starts-outage/>



“At Starbucks, I had one architect, everyone else was engineers.”

Stephen Gillette, 2012

**What is the business value of
architecture in digital companies?**

Target Black Friday

Target / Target Black Friday (38)

We just couldn't wait!

Check out our **Black Friday** ad to see all the deals right now.

Black Friday ad

4K UHD

55" 4K Ultra HD Smart TV

Special Purchase
Watchhouse Smart UHD TV
Available at select only. Quantity limited.

Only at Target
Some deals. \$10-150. Includes shipping.

Free **ASUS**
Watchhouse Smart UHD TV
Includes One \$1,000B console
Includes One \$1,000B console
Some items may have to be purchased separately.

Free **GOOGLE**
Google Home Mini
Tackle your day, any day.
Available in select areas. Some items may have to be purchased separately.

Free **URBEATS**
UrBeats Designed by
Dr. Dre and Beats. Available
at select only.

Free **ASUS**
ASUS ROG Strix Gaming Headset
Available at select only.

Free **ASUS**
ASUS ROG Strix Gaming Headset
Available at select only.



Shop deals all weekend at Target.com Free shipping on everything!

At Holiday:

**4th Highest scaling
ecommerce site**

**Millions of concurrent
users**

2s response times



(from Nov 2, 2016 to Nov 1, 2017) (in millions of
(7-day moving averages))

Source: Wolfram Alpha

In a typical month:
1000 deployments
100 new features
Zero planned downtime





Singles' Day Alibaba Stats 11/11/2016

\$1B in 5 min
\$3.3M/sec
\$17.7B total
~82% Mobile
13 minutes

The boundary between
offline and online
commerce disappears
as we focus on fulfilling
the personalized needs
of each customer.

~ Jack Ma, 2017



The big architecture era is over

Digital is about:

- Personalized value
- Speed to market
- Constant change
- Instant competition

**Digital native
companies do not
have Enterprise
Architecture**

The Netflix logo, consisting of the word "NETFLIX" in a bold, red, sans-serif font, set against a black background.The Amazon Jobs logo, featuring the word "amazon" in white and "jobs" in orange, with the Amazon smile arrow below "amazon", all on a dark blue background.The Facebook logo, consisting of the word "facebook" in a white, lowercase, sans-serif font, set against a blue background.



<https://www.facebook.com/careers/life/>



What's EA?

**What happened
to EA?**

EA has been
disintermediated

Security Architecture?



Infrastructure Architecture?



Application Architecture?



code with target

```
<p class="intro"> We're looking for developers who like to so  
Try at least one challenge to unlock the contact form.* </p>
```

```
<!-- choose a challenge -->
```

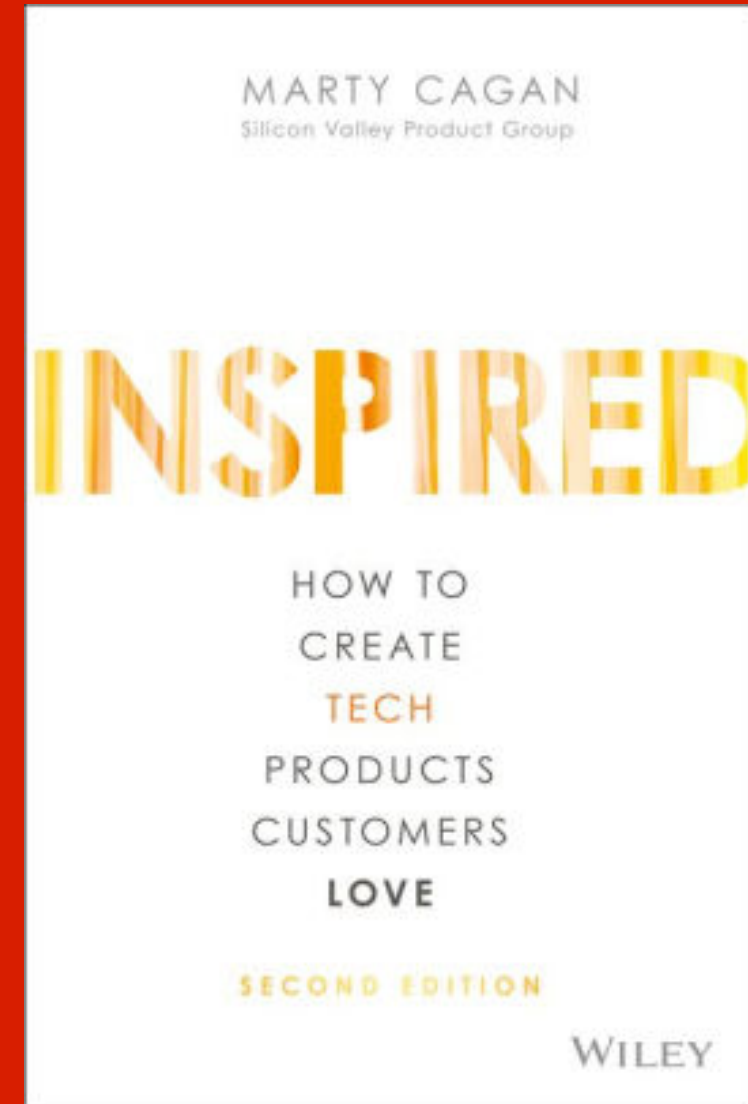
```
<div class="challenge-descriptions">  
  <p> Rock, Paper, Scissors: This challenge is simple—we'll  
  <p> Hello, Android: There's more than what meets the eye.  
  <p> Aisle Maze: See if you can make this a quick trip to t  
  <p> Data Dive: Dig deep into some data—bring your best piv  
  to the table. </p>  
  <p> The Scrambler: Secode, darse, pilter, and fort. </p>  
  <p> iOS Master: Another day, another acronym...or is it? <  
  <p> Hacked: We've noticed some suspicious behavior on one  
  out. </p>  
</div>
```

Data Architecture?



Chief Data Officer

Business Architecture?



Product Management

And EA why?



Option 1:

**Holistic
Enterprise
Oversight**

Option 2:

**Architecture
Supported
Engineering**

Technology strategy

Engineering culture

Chaos management

Enterprise Technology Strategy



S₁ T₂ A₁ Y₂

H₃ U₃ N₁ G₃ R₁ Y₂

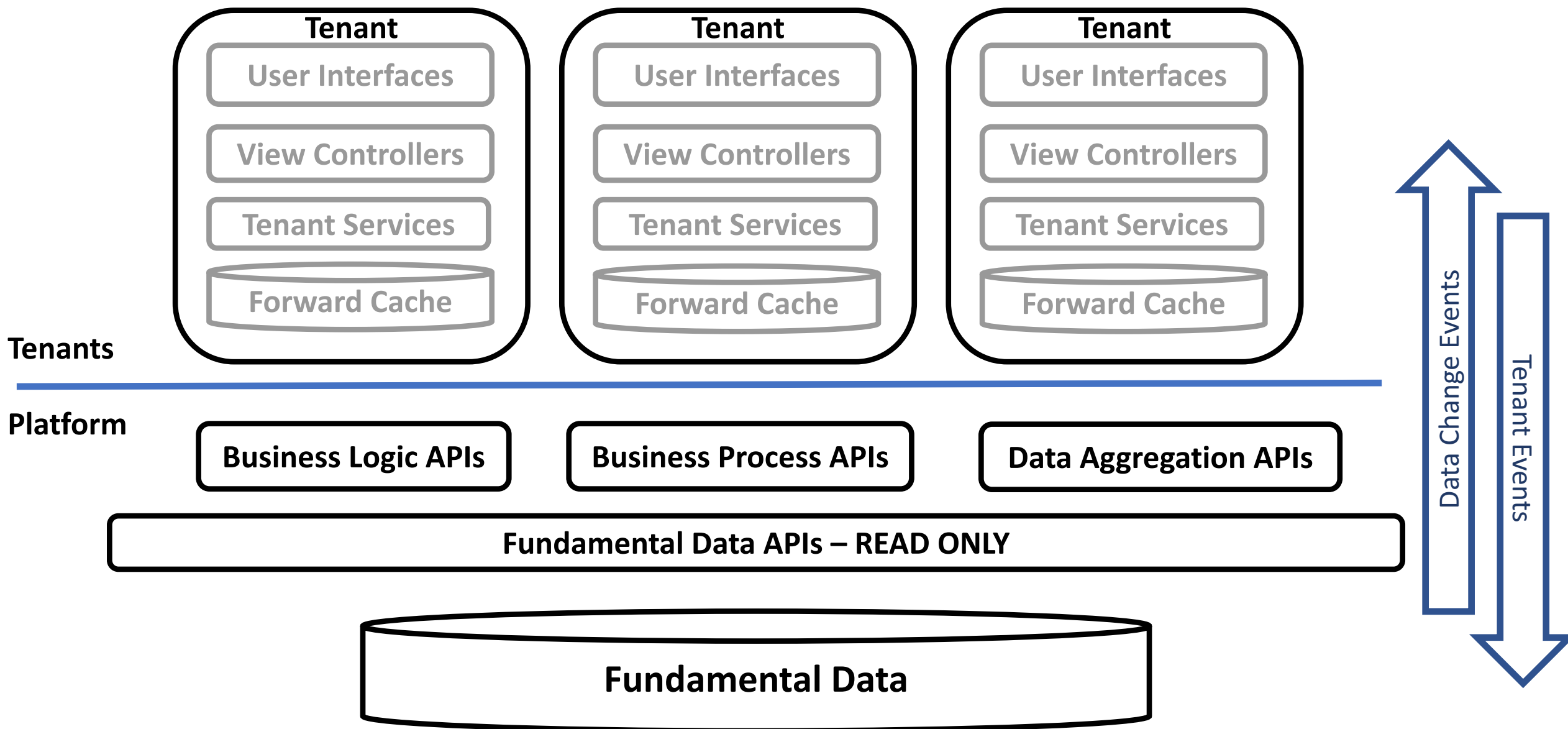
S₁ T₂ A₁ Y₂

F₅ O₁ O₁ L₂ I₁ S₁ H₃

S₁ T₂ E₁ V₁ E₁

Relevant architecture teams ensure engineering teams can quickly take advantage of great ideas

**Provide an enterprise-wide
architecture vision**



Generic Platform Architecture

Complete Platform

Engineering Culture



Forget Governance

“How could someone go build these things in a **few days**, yet it’s gonna take the student government **two years** to build an online face book.”

~ Mark Zuckerberg, 2017 interview with Reid Hoffman

Let Engineers Write Standards

The screenshot shows the GitHub interface for the repository 'tts / recommended_technologies'. At the top, there is a dark navigation bar with the GitHub logo, the word 'Enterprise', and buttons for 'This repository', 'Search', and 'Pull requests'. Below this, the repository name 'tts / recommended_technologies' is displayed. A secondary navigation bar contains tabs for 'Code', 'Issues 70', 'Pull requests 1', 'Projects 0', and 'Wiki'. The main content area features a description: 'A repo holding a list of recommended technologies' followed by a blue link 'http://go/rec_tech'. At the bottom of this section, there are two statistics: '365 commits' and '13 branches'.

Enterprise This repository Search Pull requests

tts / recommended_technologies

<> Code ! Issues 70 🔗 Pull requests 1 📁 Projects 0 📖 Wiki

A repo holding a list of recommended technologies http://go/rec_tech

🕒 365 commits 🌿 13 branches

Automatically Measure Compliance



Chaos Management



“We manage right on the edge of chaos.”

Reed Hastings, CEO, Netflix

Interview with Walter Isaacson, 2017

Be Comfortable with Change

Engineering moves
faster than you can track

Ideas spin up and shut
down in weeks

Technologies are rapidly
adopted and discarded

And EA why?

Architecture's Purpose in the Digital World

Create the
environment where
great ideas win by
getting them to
production quickly.

Digital Architecture Rules

Speed before Cost

Build before Buy

Try before Plan

Convinced?

**Jump start your
digital mindset**

INTERNET TRENDS 2017 – CODE CONFERENCE

**Mary Meeker
May 31, 2017**

kpcb.com/InternetTrends

**KLEINER
PERKINS**

<http://www.kpcb.com/internet-trends>

Start reading
tech blogs



<https://medium.com/netflix-techblog>



Software Engineering Radio

The Podcast for Professional Software Developers



**SOFTWARE
ENGINEERING
DAILY**



Google Cloud Platform Podcast



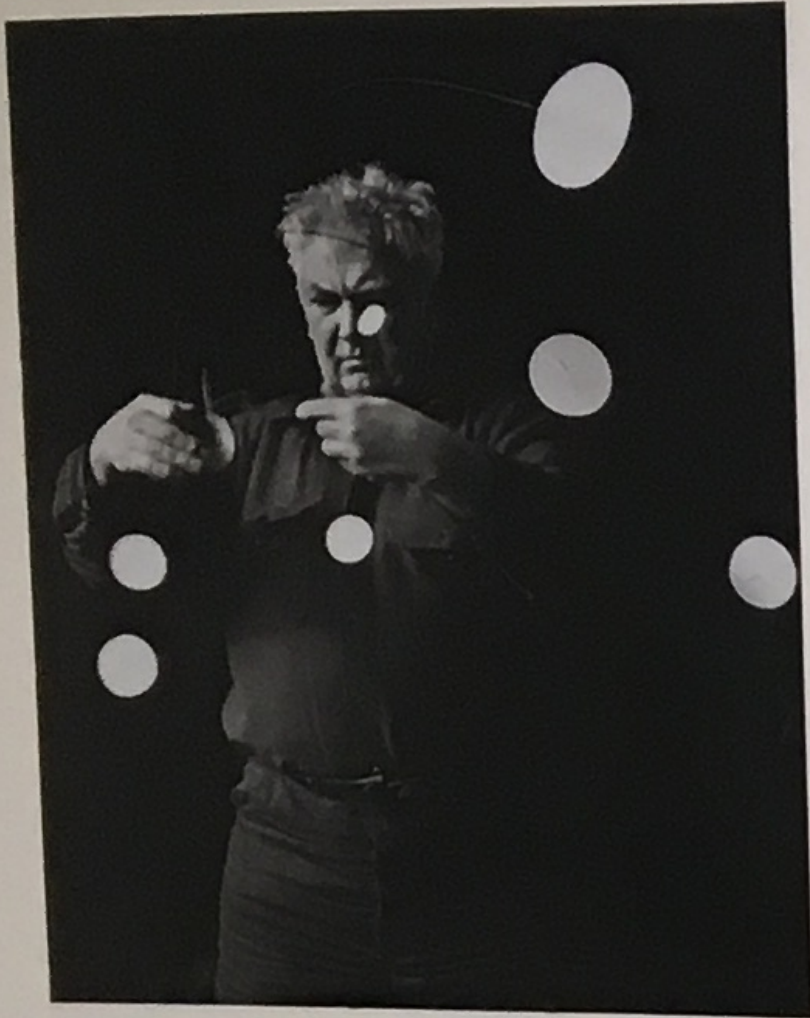
A WaitWhat original podcast in association with Stitcher

MASTERS of **SCALE**
With **REID HOFFMAN**
Co-Founder of LinkedIn & Greylock Partner

PODCASTS

Code always wins!





Alexander Calder

Alexander Calder, 1962

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The universe is real, but
you can't see it.

You have to imagine it.

Once you imagine it,
you can be realistic
about producing it.