Sprinting to Digital Transformation
Wednesday October 2, 2019 9:15am
How-To’s and Best Practices

You are focused on growth beyond the foundation/basics.

How can I simplify/enhance?

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Conexxus

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Director of Information Technology
Kwik Chek Food Stores
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Circle K Midwest Region

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Executive Director  
Conexxus

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VP Information Technology  
Sheetz, Inc.
After This Session You Can…

1. List the key benefits of API architecture
2. Identify how you can use APIs in the future to improve profits
3. Understand how to contribute to the API ecosystem
Key Future Concepts

• Technology will continue to shift power the consumer
• Disruptors see legacy markets as an opportunity
• Every business is in “convenience” business
• Every business will be in data business
• Scale is now rentable, moats increasingly mercenary
• IR4 will erode location and immediacy as moats
“Another effect of digitization: **consumers now have sky-high expectations when it comes to convenience**. They’ve become accustomed to near-instant gratification: on-demand movies and music, speedy delivery of online orders, and even smart devices that can purchase items automatically. For all retailers, this means having to **ensure a convenient, frictionless shopping experience** both offline and online. **A retailer’s accessibility and relevance are no longer just about physical location but also about digital presence**, whether through mobile sites and apps (their own or others’) or smart devices in cars and homes.”

*McKinsey, 1/19*
Frictionless Defined

What I want
When & where I want it
Depending on my situation
In my terms

Frictionless State

This is more than a shopper’s journey, it is a life journey
Digital Disruptor Advantage: Alibaba Strategy

“Automate all operating decisions”

1. “Datafy” every customer exchange
2. “Software” every activity
3. Get data flowing
4. Apply the algorithms
Alibaba Strategy in Action: Fresh Hippo

- 5000 SKU “edge” warehouse
- >80% sales online & delivered
- 30 minute free delivery within 3 km
- 100% of IT self-written, API-based
- One to 100 stores in 3 years.

First Bold At-scale
CEO Feedback

- Technology a given, how do we keep pace?
  - Agility out of legacy systems
  - Add life to sunk systems costs

- Reduce disruption risk
  - Evaluate and adopt 4IR
  - Develop digital culture & organizations
  - Out innovate potential competitors
Our Challenges…

**Brand-based Store Systems**
- Designed for oil/franchise brand operations
- Highly inflexible (security, brand objectives)
- Legacy systems of interaction (e.g. pumps, EPS)
- Disparate functionality, data structure and flows
- Designed for today’s “normal”

**Legacy Systems of Record**
- Designed for “normal” business today
- Inflexible data flows
- Inconsistent data structures
- Enterprise data visibility limited
- But they do a good job! (today)
- Culturally & financially, expensive to replace!

**Our current state is dire:**
- Innovation is expensive and laborious
- “Test & Learn” is severely restrained
- Response to disruption will be feeble
- Digital culture is hard to establish
- Tech stack is expensive to maintain
- AI benefits will remain elusive
If we were a machine...

We are fairly resilient, but prone to disruption

We need to be wired for learning & agility
Data and APIs – Success and Disruption
What is an API?

An application programming interface (API) is an interface or communication protocol between a client and a server intended to simplify the building of client-side software. It has been described as a “contract” between the client and the server, such that if the client makes a request in a specific format, it will always get a response in a specific format or initiate a defined action.

An API may be for a web-based system, operating system, database system, computer hardware, or software library.
A little API History

1998
XML RPC

2004
SOAP (WSDL)

2009
AJAX

RESTful APIs
API Success Stories

- Stripe
- Ebay
- Salesforce
- Walmart
- IRS
- Amazon

Heather Weaver on Nordicapis.com
Technical debt (also known as design debt or code debt) is a concept in software development that reflects the implied cost of additional rework caused by choosing an easy (limited) solution now instead of using a better approach that would take longer.

“Bespoke” solutions raise technical debt.

APIs based on standards reduce it.
Key Benefits

- Monetization of your own data
- Introduce strategies for valuable partnerships
- Lower technical debt
- Enabling agility in creating new features
Rewiring the Enterprise

Central Nervous System & Memory (amorphous)

NEW Innovation APIs
E.g. delivery service, payment innovation, etc.

NEW Analytics Data APIs

NEW Structured Data APIs
E.g. IOT, consumer data feeds, weather, news, forecasts

NEW Partner Data Exchange APIs

Structured legacy data exchange APIs

- Associates
- Suppliers
- Customers

In-store system APIs

- Machine Learning
- Predictive analytics
Data and APIs – Retailer Panel
Fuel and Convenience - Data and API Strategy
Conexxus API strategy

• Leverage existing standards
• Provide “guardrails” for API development
• Provide “how-to” and education for members
• Instigate processes for accepting API submissions
• Create global solutions in the API space
• Maximize benefit to retailers
• Minimize technical debt in “bespoke” solutions
Introducing IFSF

- International Forecourt Standards Forum
- In operation 25 years in Europe
- Members are Major Oil companies
- Conexxus collaboration on
  - Forecourt Device Controller (FDC)
  - Electronic Payment Server (EPS)
  - Data Dictionary

Collaborating on open-retail.org to create a highly functional API Ecosystem for Convenience Retail!
API Guidelines

Approved
• JSON Design Guidelines
• API Design Guidelines
• API Implementation Guide – Transport
• API Implementation Guide – Security
• Example API Definition File

To do
• Provide a “how-to” quick-start guide for committees
• Address requirements for a common data dictionary
High Priority (now)

- **POS Activity Reporting APIs (PARA)**
  *Decouple POS / Back Office Reporting data*

- **POS Data Configuration APIs (PDCA)**
  *Provide POS Data (pricebook) for multiple uses*

- **Cloud POS Calculator APIs (CPCA)**
  *Provide access to common algorithms*
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Translation: 28 – 32 actual APIs for PARA, PDCA, and CPCA
Medium Priority (working)

• Fuel control (FDC)
  *IFSF has already provided a draft proposal*

• Digital Offers
  *The Digital Offers WG has a draft proposal*
Lower Priority (future)

- **Loyalty**
  *Will include integration with PARA transactions*

- **Mobile Payments**
  *Successful spec, needs revision and “api-ization”*

- **Electronic Payment Server**
  *API for the site server*
  *API for Front End Processors (FEPs)*
APIs: Square 1
APIs: Decoupled
Store Configuration

POS

Pull Data

PDCA

Push Data

Back Office

Corporative "Cloud"
Many-to-Many

Mobile POS
Food Service
Order Ahead
BYOD

Accounting
Analytics
AI

PDCA
CPCA
PARA

Back Office
Corporate "Cloud"
Analytics
Strategic Advantages

• Unlock data resources to multiple sources
  • Better support for advanced price book
  • Integration with advanced supply-chain initiatives

• Use operational data in new and inventive ways
  • Advanced Analytics
  • Machine Learning / AI

• Improve interoperability

• Leverage core competencies to attract partners
Conexxus APIs

• Speed to completion for new features
• Agility revise architectures quickly
• More relevance for your brand
• Greater adoptability for our industry.

• Join us and help move the ball!
Key Takeaways

1. New uses of data in Retail (5 years)
2. Urgent data challenges for Retail Operations
3. Transformational technologies for data
4. Weakness of "bespoke" data strategies
5. Why APIs are important to data strategy
6. How APIs work both in the cloud and the store
The Cost of Chaos

Retailer cost for 1 API
Conexxus is investing >$1M to drive that cost to this
Conexxus vendor-member adoption will further reduce cost to this

We believe we can save 90% of the cost and time to market of API migration
We are independent & non-profit…
  • Expert volunteers, shaping the industry
We set standards…
  • Data exchange, security, payments
We provide clarity…
  • Emerging tech/trends; identifying & educating
We advocate for our industry…
  • Open standards, innovation & competition
We improve profitability
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