

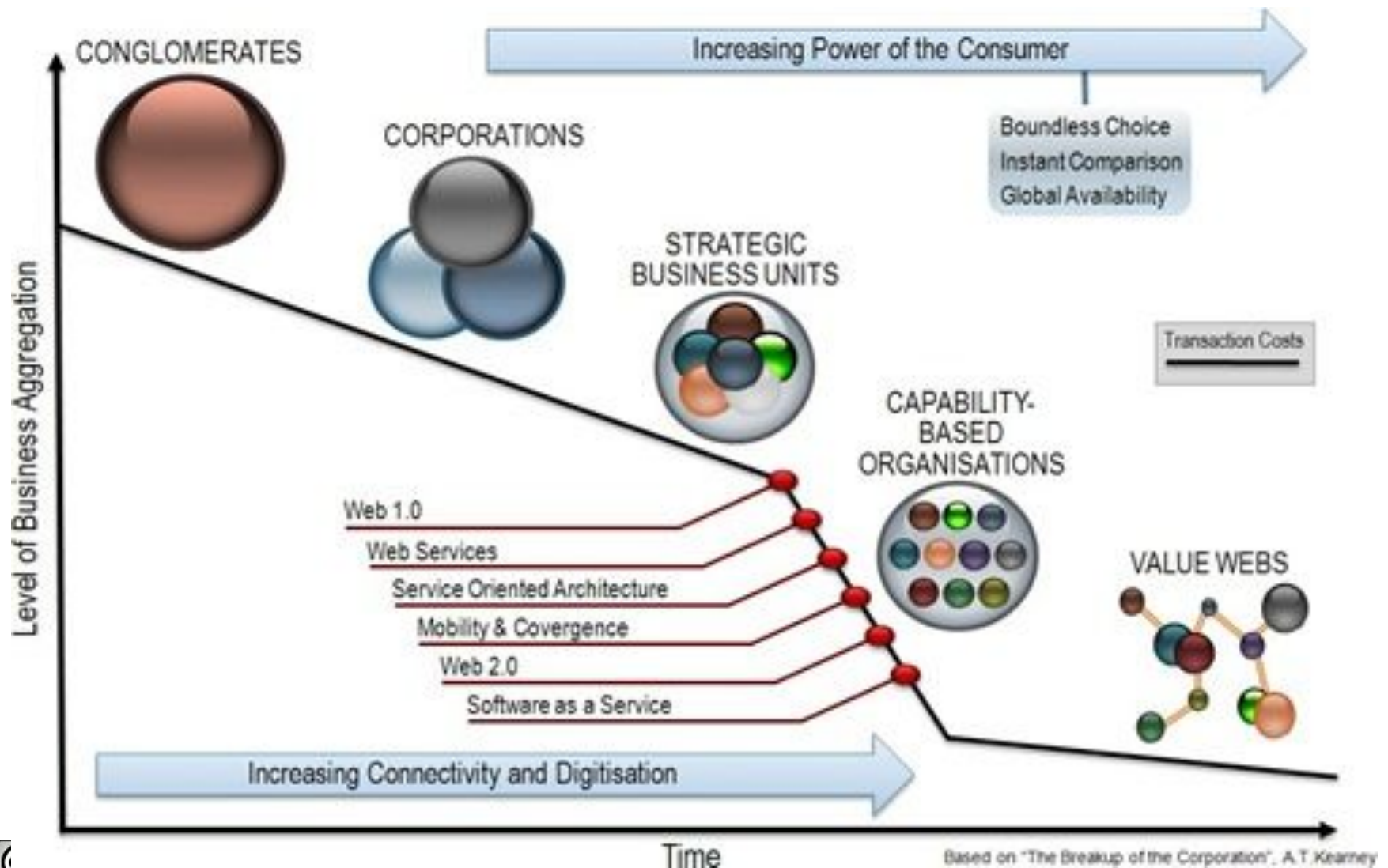
APIs and API Management

Oxford University
Software Engineering
Programme
April 2021



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The Breakup of the Corporation

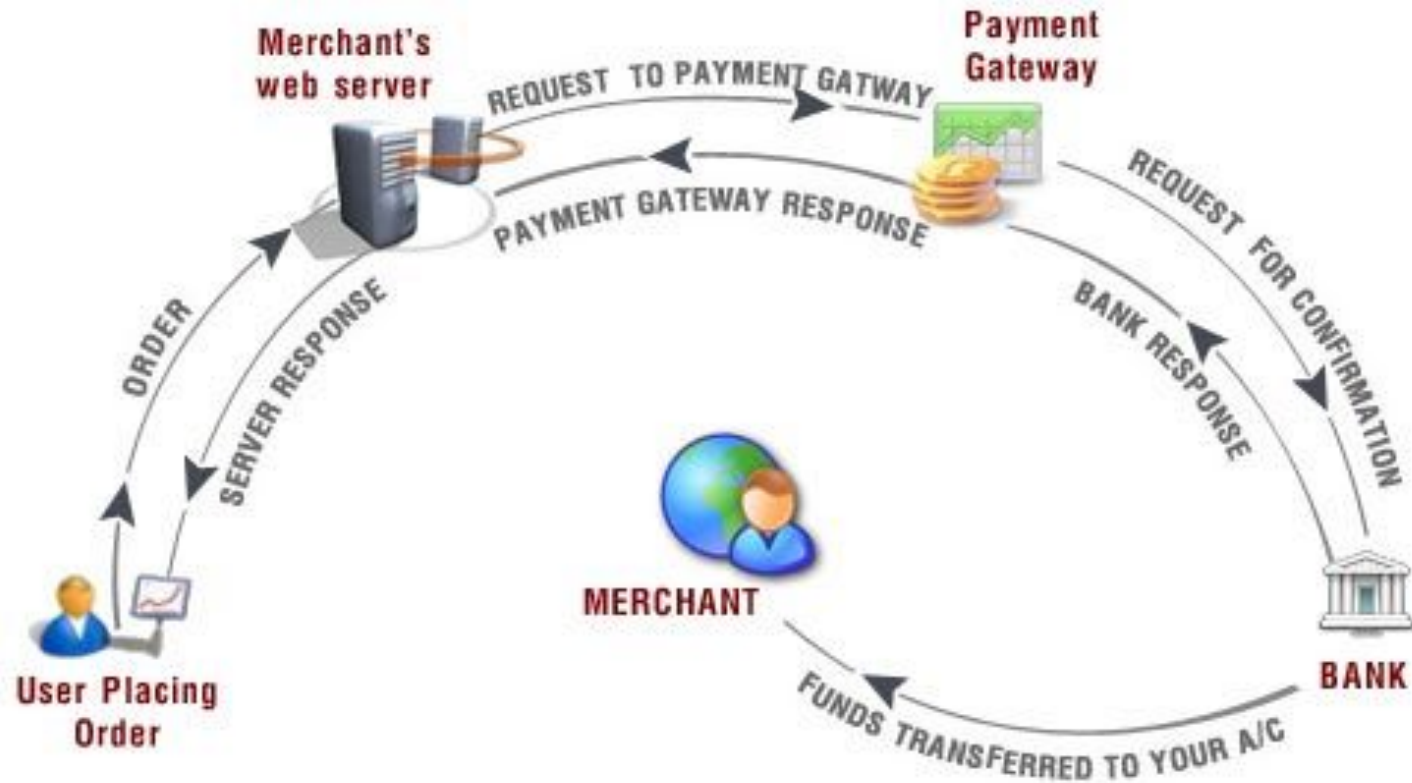


APIs

- **An API** is a business capability delivered over the Internet to internal or external consumers
 - Network accessible function
 - Available using standard web protocols
 - With well-defined interfaces
 - Designed for access by third-parties
- **A Managed API** is:
 - Actively advertised and subscribe-able
 - Available with SLAs
 - Secured, authenticated, authorized and protected
 - Monitored and monetized with analytics



APIs All the Way...





Growth In Web APIs Since 2005



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Some statistics (3-5 years old)

- Twitter : More than 15 billion calls per day 75% through APIs
 - Netflix : More than 1 billion calls per day
 - Facebook : More than 5 billion calls per day
- Amazon : More than 260 billion objects store in S3
- eBay : More than 6 billion transactions per day




Wells Fargo Gateway - Home x +

developer.wellsfargo.com

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Data Services

Improve productivity and customer service with instant access to critical information any time and on any device

- Account Aggregation
- Account Balance
- Account Statements
- Image Retrieval
- Make an Appointment
- Tax Information
- Transaction Detail
- Wells Fargo Locations



Payments

Seamlessly integrate payments into your app, website or back-office system

- Account Validation Services
- ACH File and Batch Status
- ACH Payments
- Foreign Exchange
- Push to Card
- Wire Payment and Status
- RTP Payments

Open Banking Europe

Provide seamless access for Wells Fargo customers with accounts in Europe

<https://developer.wellsfargo.com/apis/payments/wire-payment-and-status>





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commuter experiences.

The role of APIs

APIs integrate road, rail, and commuter systems to fuel data intelligence and decision making.

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developer.service.hmrc.gov.uk/api-documentation

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Explore APIs

- [API documentation](#)
- [Reference guide](#)
- [XML APIs](#)

Integrate


- [Add application](#)
- [Manage applications](#)
- [Testing in the sandbox](#)
- [Create a test user](#)

<https://developer.service.hmrc.gov.uk/developer/registration>



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“We want to blur the lines
between our technology and
our customers”

Jonathan Pearl,
Director and Global Head,
NEXEN Platform Management,
BNY Mellon



The Global Impact

APIs now account for 25% of the Internet's traffic.

\$1 trillion is up for grabs through the redistribution of revenue through APIs (McKinsey 2017).

25% of revenue flows through APIs (Vanson Bourne 2018).



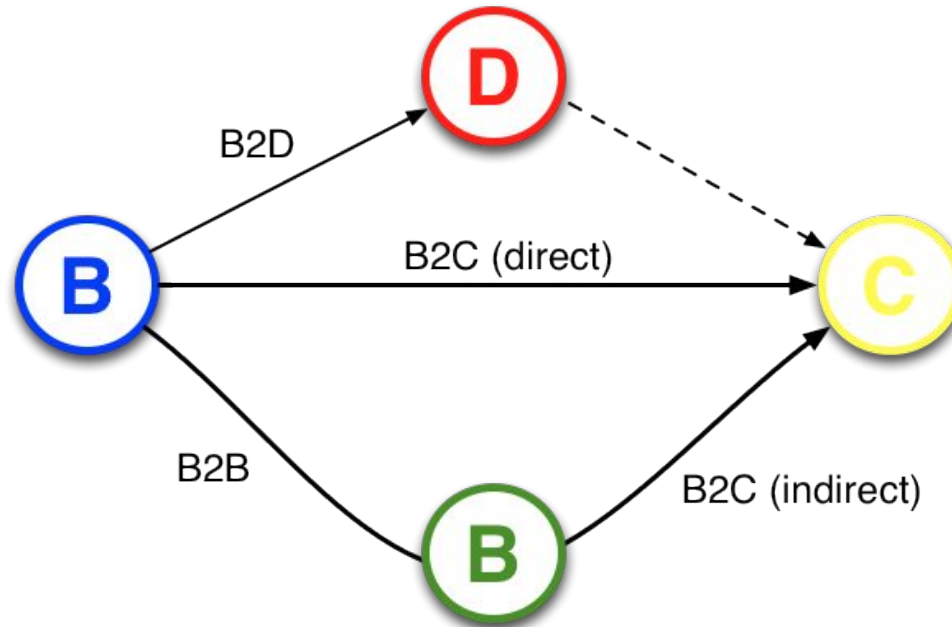
“

APIs create business agility that fosters the rapid business reconfiguration necessary to continually adapt to an unknown future of constant change.

- **Randy Heffner**
Forrester Research

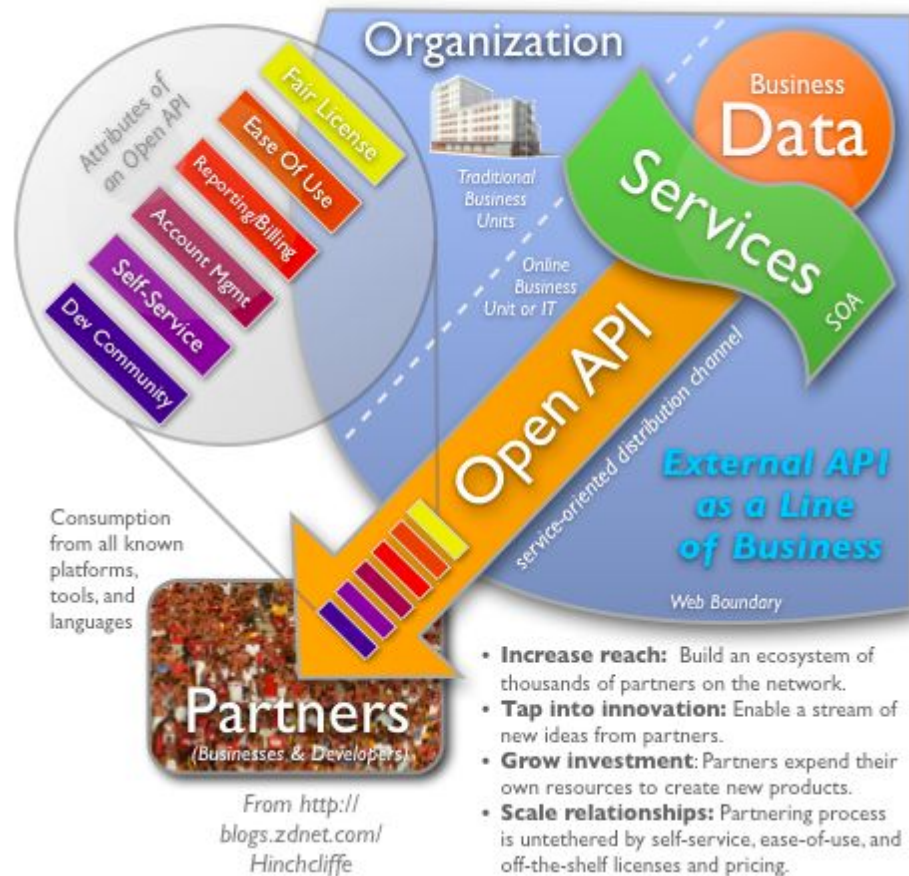


API Opportunities



“APIs create a new relationship opportunity – B2D; Business to Developer, that creates direct B2C, B2B and indirect B2C relations”

Running your SOA like a Web startup



<http://www.zdnet.com/blog/hinchcliffe/running-your-soa-like-a-web-startup/525>



API Management

API management platform



API: ALEXANDER/SHUTTERSTOCK

WORD PRESS/TARGET: ALL RIGHTS RESERVED. TechTarget

<https://searchapparchitecture.techtarget.com/definition/API-management>



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API Management benefits

- Storefront
- Prototyping and fast feedback
- Aggregation and virtualisation
- Versioning
- Documentation
- Key issuing and management
 - Transparent OAuth2, JWT
- Workflows
 - On-boarding, subscription, approval
- Throttling and monetisation
- Analytics



Questions?



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