### Contracts with Your Future: Applications Programming Interfaces

Monday, February 11, 2013

CTO School Meetup Pivotal Labs New York, New York

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Introduction APIs are Forever "Alphabet Soup" Syntax vs. Semantics The Support Problem

- APIs are Forever
- "Alphabet Soup"
- Syntax vs. Semantics
- The Support Problem
- Identifying Key Issues
- Publishing Definitions
- Validation/Sandboxes
- The Future

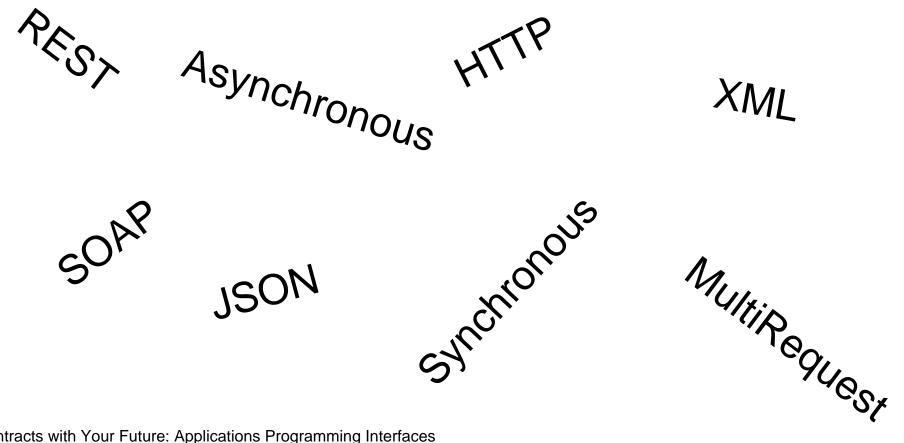
Introduction APIs are Forever "Alphabet Soup" Syntax vs. Semantics The Support Problem

## **APIs are Forever**

- APIs are export products
- Outsiders will invest \$+++ in code
- Deprecation perhaps; Removal unlikely
- Shortcomings have LARGE consequences

Introduction APIs are Forever "Alphabet Soup" Syntax vs. Semantics The Support Problem

## "Alphabet Soup"



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Introduction APIs are Forever "Alphabet Soup" <mark>Syntax vs. Semantics</mark> The Support Problem

# Syntax vs. Semantics

- The "Mad Libs(TM)" Test
- JSON vs. XML irrelevant
- JSON with eval() dangerous
- RPC vs. REST relevant
- SOAP vs. REST irrelevant

"Alphabet Soup" Syntax vs. Semantics The Support Problem Identifying Key Issues

# **The Support Problem**

- Bugs are expensive
- Ambiguity is worse
- Problems in the age of Twitter
- Whose fault?

Syntax vs. Semantics The Support Problem ldentifying Key Issues **Publishing Definitions** 

# Identifying Key Issues

- Synchronous/Asynchronous
- Transport (e.g., HTTP, SMTP)
- Integrity
- Security (e.g., HTTPS, HTTP)
- Expandability
  - Transaction IDs
  - e.g., HTTP 1.0 vs. HTTP 1.1

# Expandability mitigates obsolescence

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The Support Problem Identifying Key Issues Publishing Definitions Validation/Sandboxes

# **Publishing Definitions**

- Imprecision causes confusion
- Less expensive than later problems
- Schemas provide a formalism
- Grammars beyond schemas
- State machines
- Character sets (e.g., ASCII, UTF-8)

Identifying Key Issues Publishing Definitions Validation/Sandboxes The Future Summary

# Validation/Sandboxes

- Publish good examples
- Maximize use of sandboxes
- Grammar+Schema implies correctness
- Use same tools for testing

Identifying Key Issues Publishing Definitions Validation/Sandboxes The Future Summary

## **The Future**

- Well-thought out APIs are timeless
- Less diversity; less expense
- Preserve customer code investment
- Avoid error resolution

Identifying Key Issues Publishing Definitions Validation/Sandboxes The Future Summary

## Summary

APIs should NOT be considered agile, they are a contract with your customer and future. Good specifications reduce long-term, aggregate costs for vendor and consumer.

# **Questions?**

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Session Notes & Materials:

http://www.rlgsc.com/nycctoschool/2013-02/contract-with-your-future.html

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