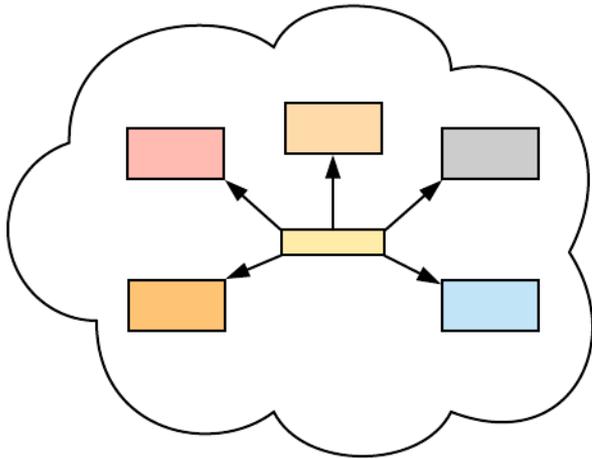# On-demand Integration Platform
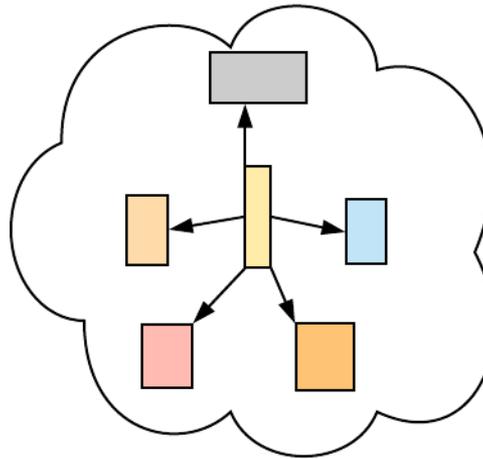
No RFI/RFP needed

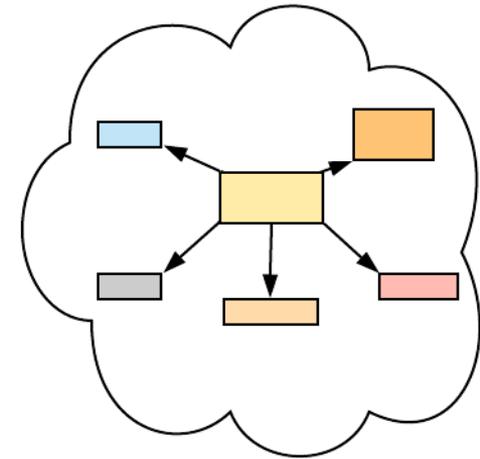# Many integration styles, platforms, scopes

Campus - intra

Project

Application

Point to point
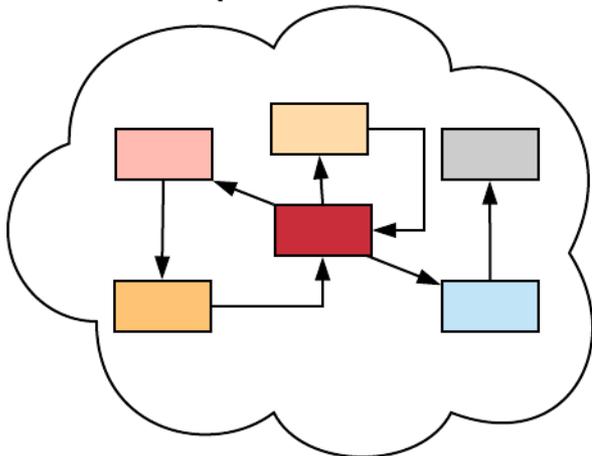
Campus - inter - adhoc

Vendor

Service

Entity
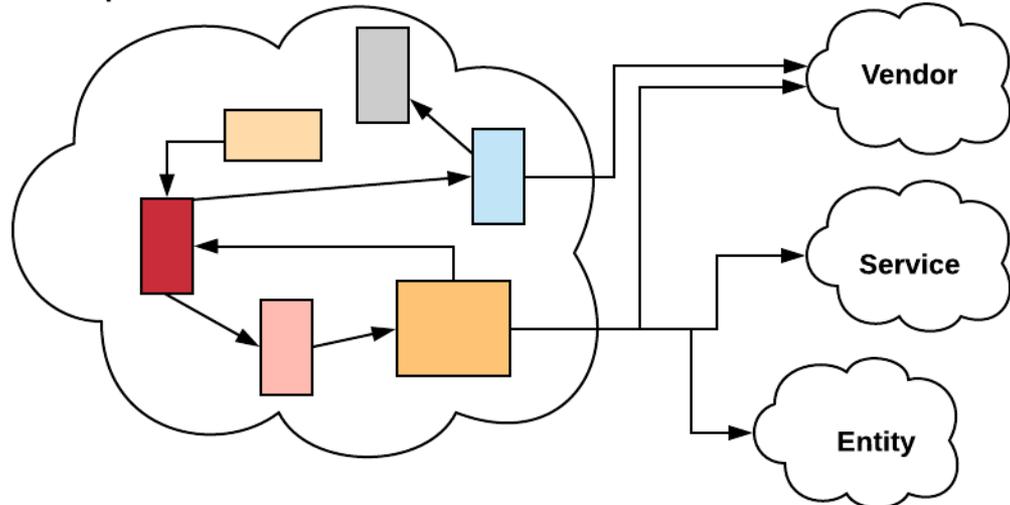
Where did you get your platform?

Inheritance: Not an "Independent" selection

Business Application

Embedded Integration Capability

Business Application

➕

Application "add-on" Integration Capability

Business Application

➕

Application Vendor or Partner Integration Platform

OR

We purposely selected it
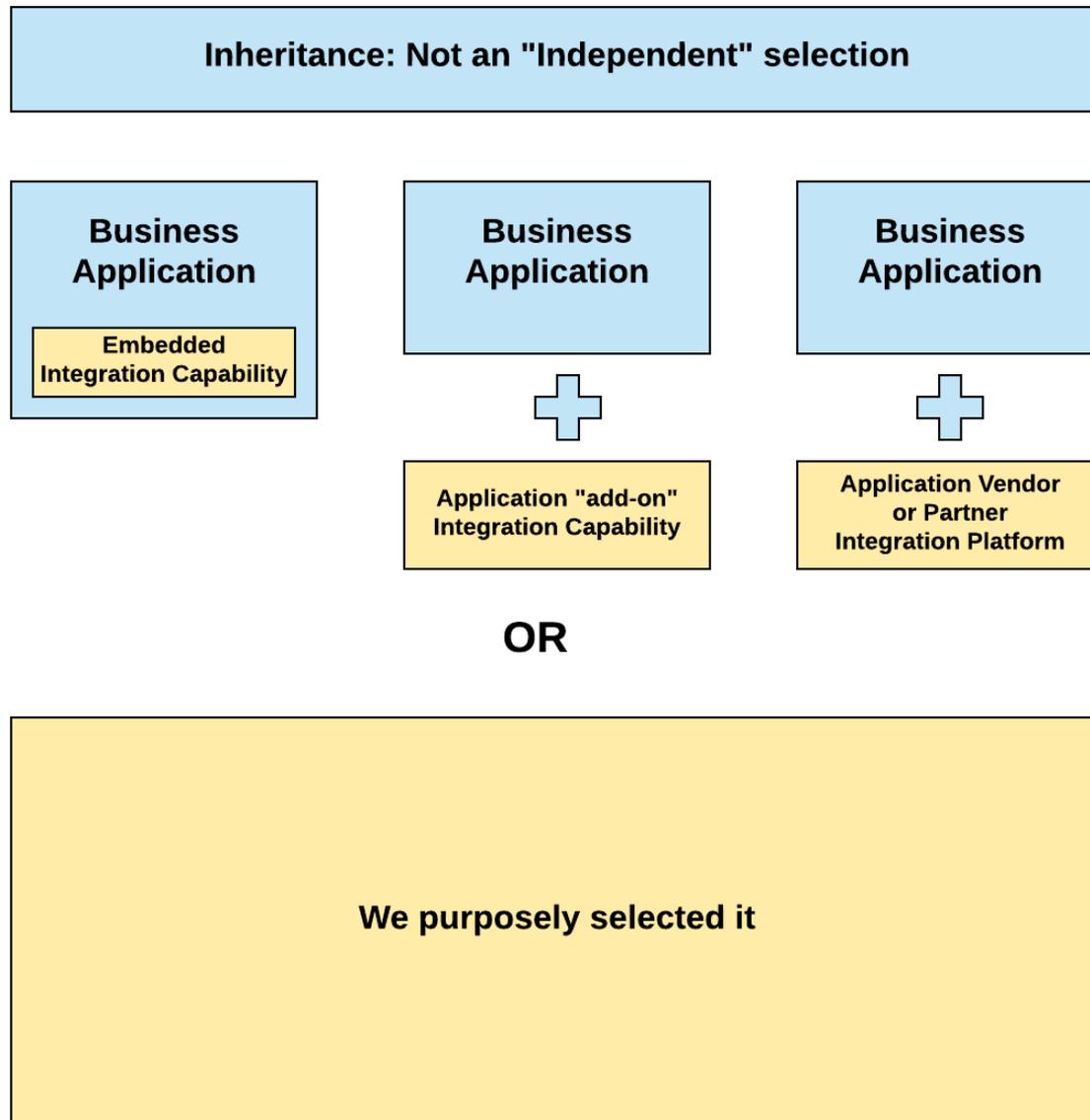
Business Application "Bundle"

- When your integration platform is the result of a "bundle" situation (project or packaged solution):
 - Emphasis on the integration platform is reduced
  - Business fit (functionality) is typically 80+% of the overall scoring/selection, so everything else will share 1-20%, including integration capabilities
  - Options, beyond the original circumstance, may be non-existent

- It's prone to lock-in, and it's tough to use a bundled platform for anything other than the original use case

Independent selection

- If you were (or will be) free to choose an integration platform, independent of any individual project or business application, …. Congratulations!

- You may notice this route is more of an IT led project
  - IT has way more than 20% scoring weight
  - The functionality required, marketplace options, potential projects etc. has increased the selection effort dramatically
  - Evaluation criteria are different - more comprehensive

- Due to the bigger scope, you may feel pressure to select a "right-for-eternity" integration platform, and that process may resemble the following ….

Integration Platform selection steps
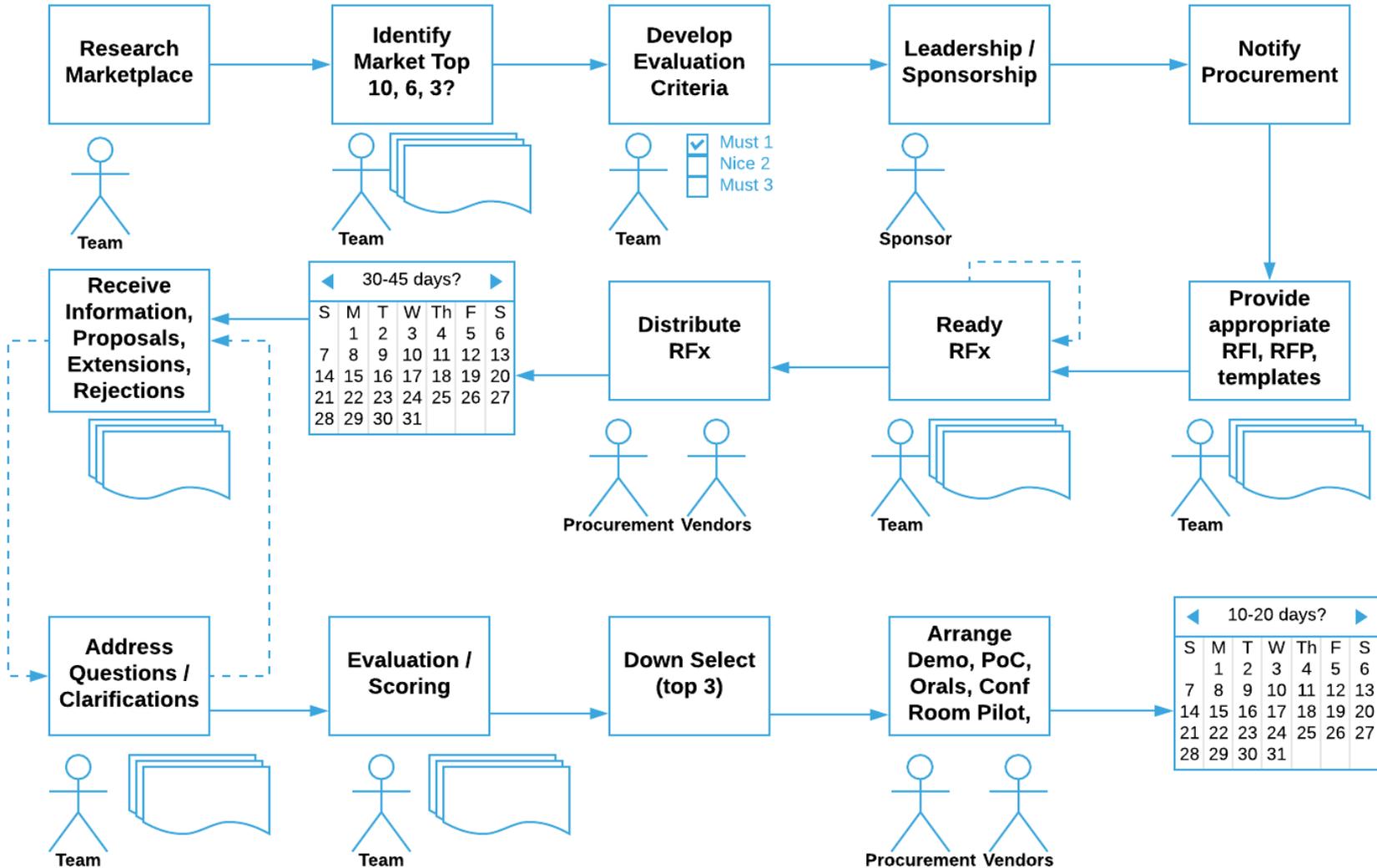
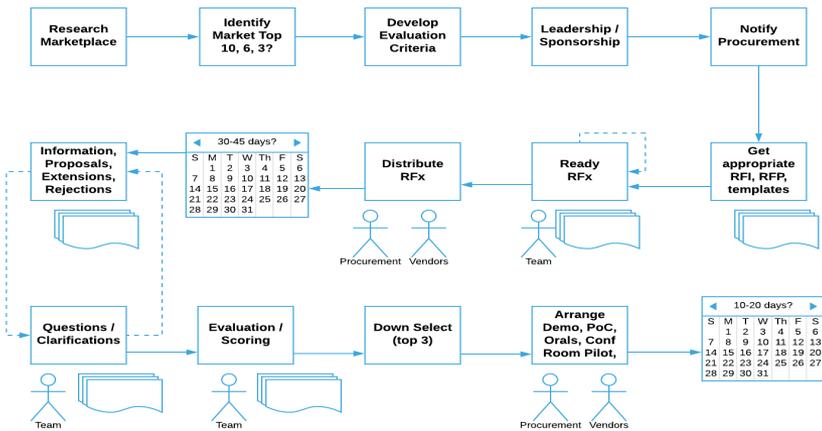# Hold on… some more steps…
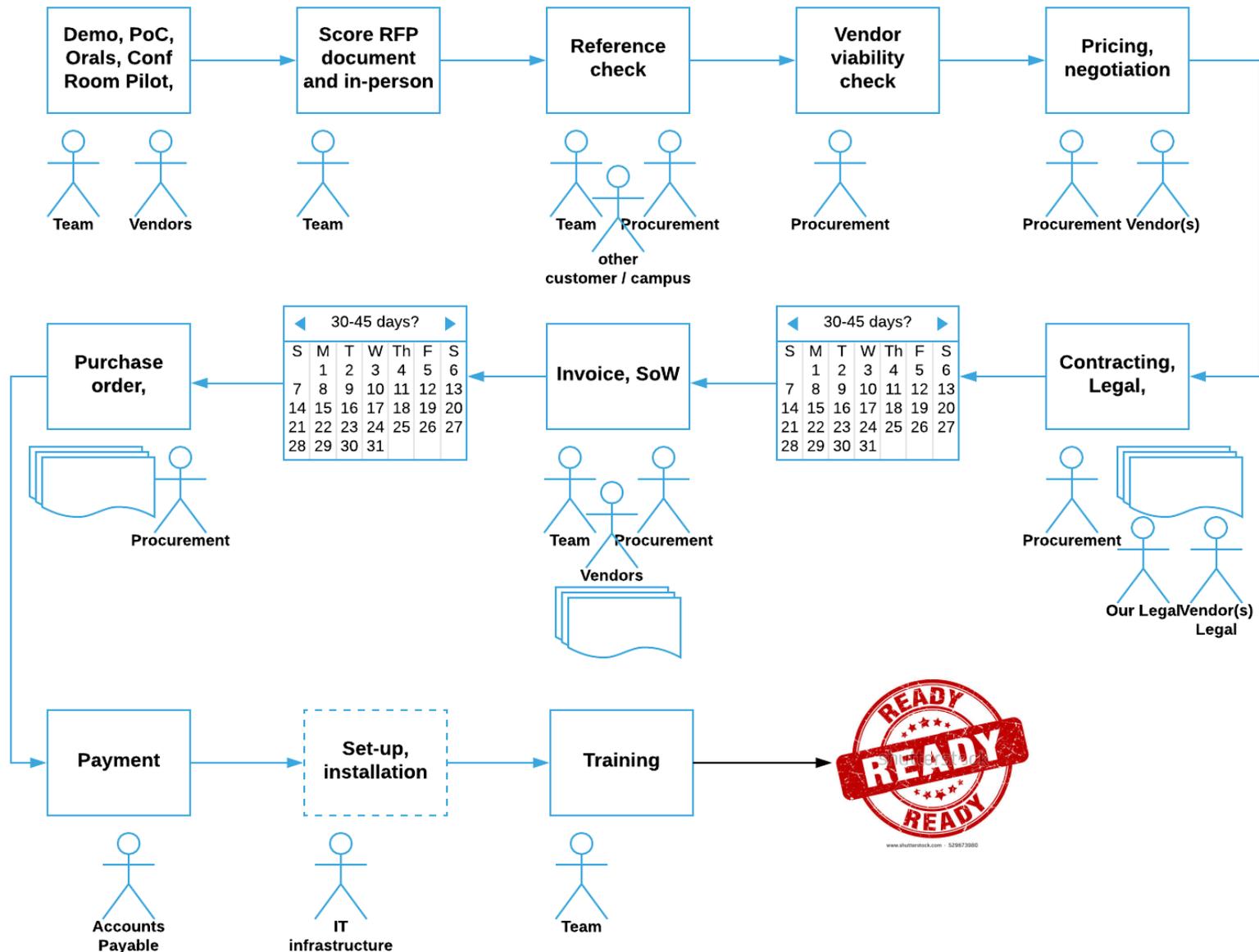
Meanwhile back at the ranch ….

- What happens while we're researching, evaluating, scoring, contracting, purchasing, etc. ?
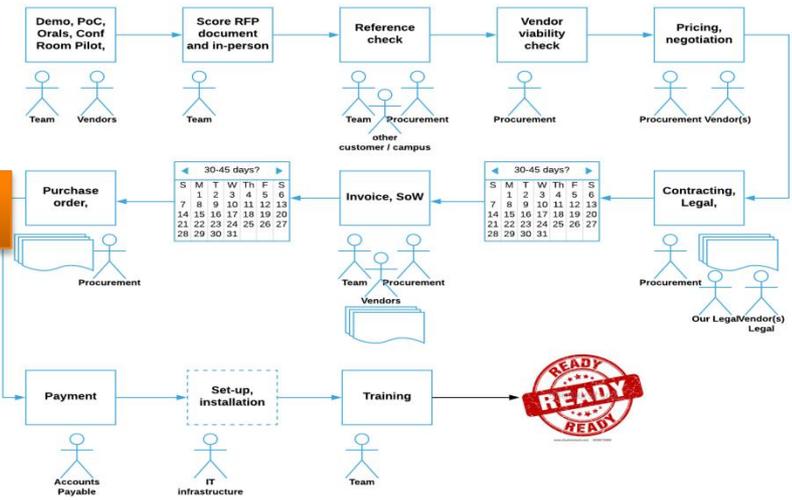

Funding reallocated, depleted

Distractions, additional priorities

Risk went up / changed

Resources get reassigned

Will "make do" or work-around

Learning from prior escapades

- Some informal stats from campuses that have gone through an integration platform selection process
  - Average of 6 platforms considered, 3 shortlisted
  - Average of 100 days of effort reported
  - Few actually implement (1 in 4), citing
    - Project was deferred
    - Costs projections were too high (platform and/or implementation)
    - A change of focus
  - All report they will try again

Key Learning: Seize or fail

- If we can't seize the opportunity to select/implement an integration platform, quickly, within budget, etc. or if can't deliver integration (webServices) promptly, then …
  - Opportunity passes us by
  - We're "forced" to use the project/application centric integration platform
  - We have to stand up yet another "snowflake" service container for the project/application webServices

- What can we do to get "there" quicker
  - What can we reduce?
  - What can we accelerate?

Reduce evaluation, duration, scope?

- How much value is there in evaluating multiple platforms with relatively similar capabilities?
  - e.g. When looking for an RDBMS, would you evaluate DB2, MSSQL, MySQL, Oracle, …. or just pick one based on vendor stack, tangential technologies, in-house skills, price, etc.?

- How deep should you go on the first pass, 6 to 3?
  - Price, market share, vendor reputation, instinct, bias?
  - Are there any surprise vendors in the top 3?

- How deep do you go on the evaluation of 3 down to 1?
  - Paper based, generic demos, presentation/questions, trial software, price, skills, anticipated longevity, …functionality?
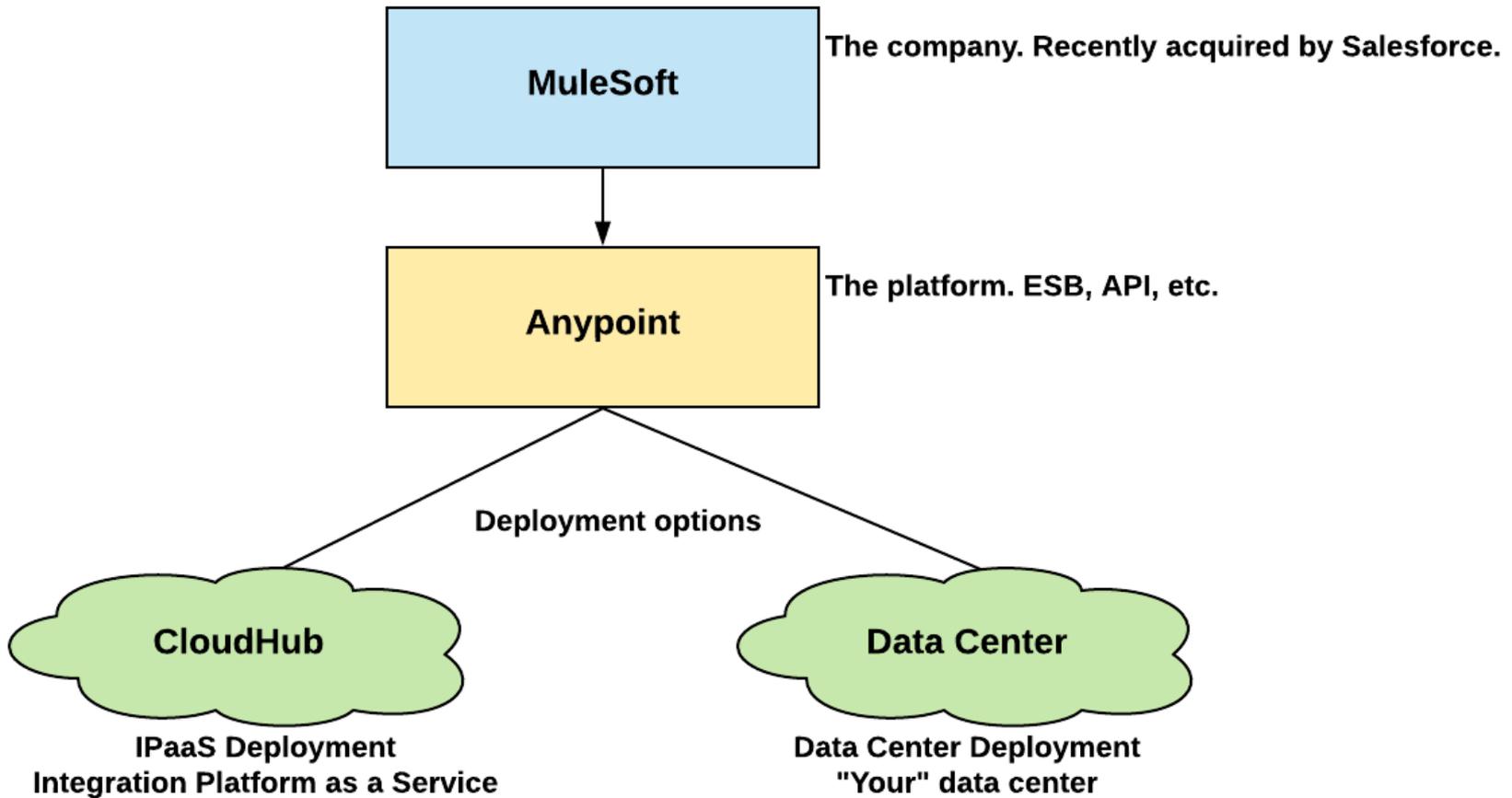
Any acceleration options available?

- What can you use to accelerate the process:
  - Leverage the experience of colleague, project, department, campus, university, industry, market place?
  - Go with what a vendor recommends?
  - Choose the top-right-most vendor in a quadrant?
  - Rely on your experience; e.g. previous time/place or recent hands-on prototyping/experiment
  - Your gut instinct?
  - Magic 8-ball?

Ask JEROME

Go with a frictionless option

- A platform that is capable, future-proof, and accessible to everyone at UC
  - Frictionless – few/no barriers to entry
  - Fast access – days, not weeks or months
  - Vibrant market for skills and resources
  - Broad reuse – easy discovery, immediate reuse
  - Multiple architectures – ESB, API, Micro Services, etc.
  - Cloud (IPaaS) and data center deployable
  - Exhibits continuous platform investment and innovation
  - Scalability and Security – for Project, Campus, Systemwide
  - Partnership, one based on mutual success

MuleSoft / Anypoint / CloudHub

MuleSoft

The company. Recently acquired by Salesforce.

Anypoint

The platform. ESB, API, etc.

Deployment options

CloudHub

IPaaS Deployment
Integration Platform as a Service

Data Center

Data Center Deployment
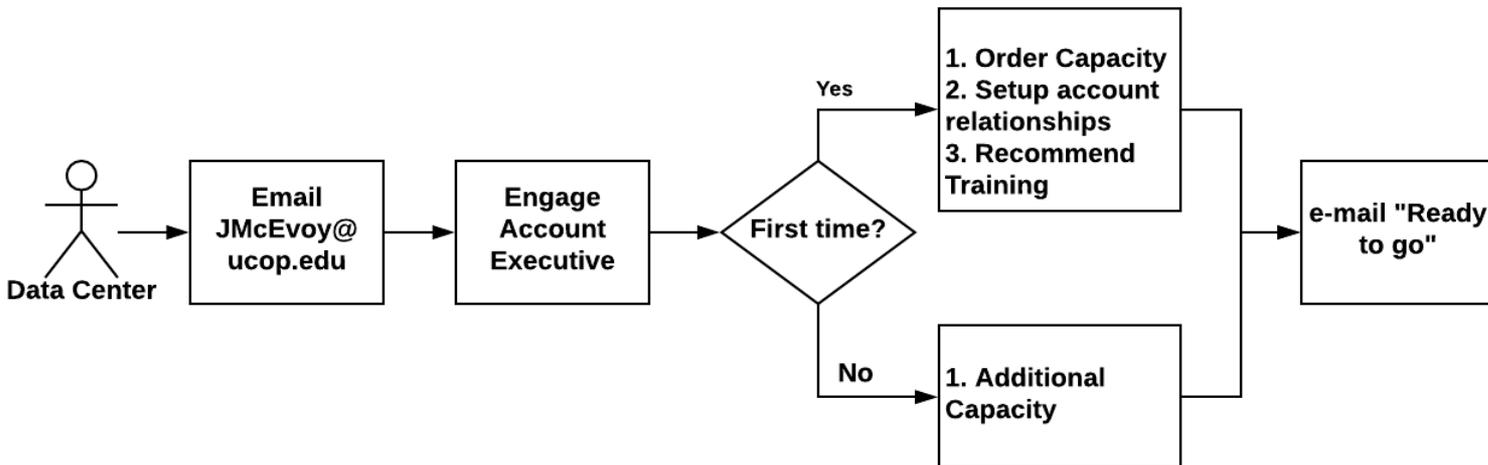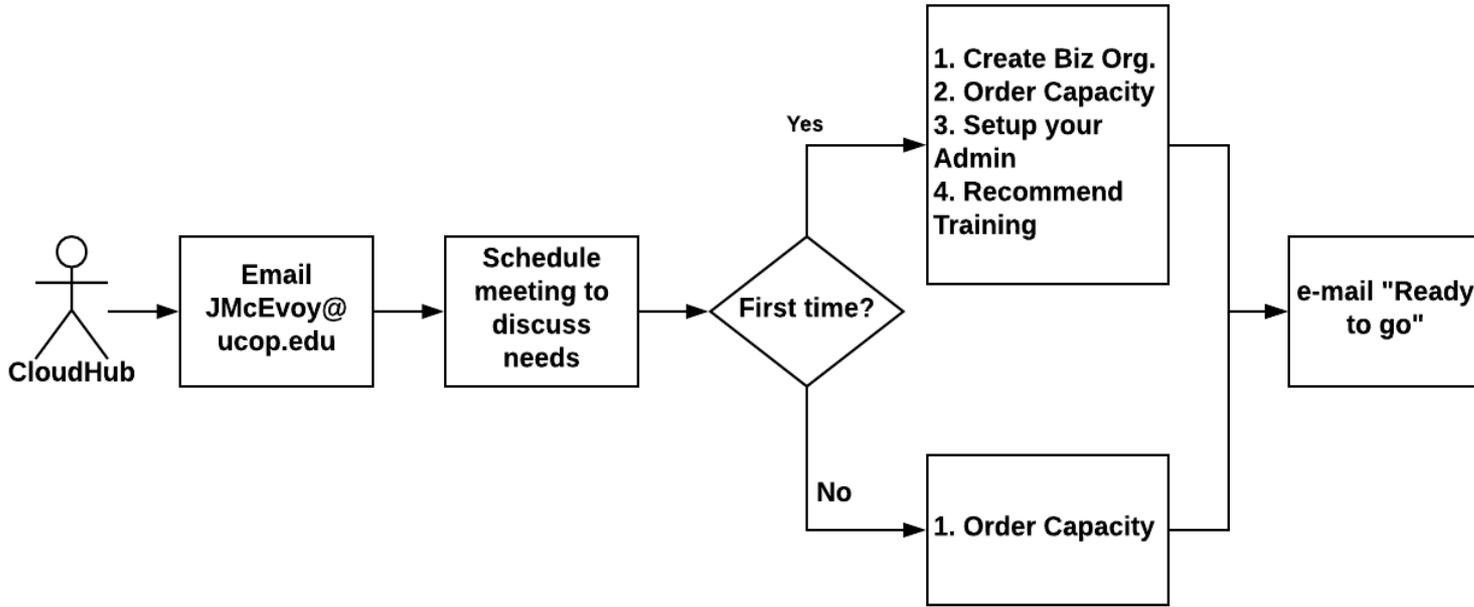"Your" data center

Partnership

- Solid relationship
  - No "divide and conquer" mentality
  - Invested in our success
  - Goes well beyond licensing
  - Provides resources beyond the "help desk"
  - Provides consultation, tools, best practices, access to their customer base, etc.

Beyond the typical "Support Package"

- Ability to call MuleSoft for product specific assistance
  - Normal 'open a ticket/case' process
  - Response, resolution has been good so far

- They add additional top tier support
  - Account Executive
  - Customer Success Engineer
  - Customer Success Manager

- We add UC 'mutual' support
  - Ability to call other UC users
  - Reuse via Exchange (repository)

Onboarding process

Orgs - Campus or Systemwide Projects

What "Capacity" looks like

Production vCores

4	/ 4.6

VPCs

2	/ 2

Sandbox vCores

3	/ 4

Load Balancers

1	/ 1

Design vCores

4	/ 5

Static IPs

11	/ 11

Users, Environments

○	Ilti Support	iltiSupport	support@uconline.edu
○	ILTI Admin	iltiAdmin	support@uconline.edu
○	Jenkins Server	jenkins-server	jenkins@uconline.edu
	Jerome McEvoy YOU	UC-Jerome	jerome.mcevoy@ucop.edu
○	Mukund Gidadhubli	gidadhublim	Mukund.Gidadhubli@ucop.edu
○	Rahul Reddy Morthala	rahulmorthala	Rahul.Morthala@ucop.edu

Environments

Add environment

Name	Type
UCPath-Design	Design
UCPath-Dev	Sandbox
UCPath-QA	Sandbox
UCPath-Test	Sandbox

APIs, Environments

API Administration (UCPath-Dev)

UCPATH-DEV

API Administration

Client Applications

Custom Policies

Analytics

| Manage API ⌄ | Promote from environment | 🔍 Search ✕ | 1 - 10 of 10 ⌄ | ‹ › |

All Favorites Active

API Name	Version	Status	Client Applications	Creation Date
⌄ campus-sys-api				1 version
	1.0	● Active	2	03-13-2018 15:46
⌄ common-orchestration-prc-api				1 version
	1.0	● Active	2	03-13-2018 15:50
⌄ glacier-sys-api				1 version
	1.0	● Active	2	03-13-2018 15:48
⌄ notifications-sys-api				1 version
	1.0	● Active	10	03-14-2018 09:48

Exchange - CCES

Exchange - UCPath

ucpath-api-template ✏

★★★★☆ (1 review)   Rate and review

This is the basic API Template to be used for future UCPath related API's

Includes:
- POM configuration for deployment to Anypoint Platform via CLI using Maven
- Ping example flows, MUnit tests
- Basic RAML fragments and folder structure
- API Auto-discovery configuration
- API-Kit exceptions including additional custom exceptions

To Deploy:
Execute the following command, substituting the ${VAR} with your requests values
Please see pom.xml for details on what each variable is used for

```
mvn clean deploy "-DchUsername=${chUsername}" "-DchPassword=${chPassword}" "-
DchEnvironment=${chEnvironment}" "-
DchApplicationSuffix=${chApplicationSuffix}" "-DchWorkerType=${chWorkerType}"
"-DchNumWorkers=${chNumWorkers}" "-DappEnv=${appEnv}" "-
DappSecretKey=${appSecretKey}"
```

An example would be:

Share   Download   Edit   ⋮

Overview

Type	⊗ Custom
Organization	🏛 UCPath
Created by	GF Graham Fraser
Published on	📅 May 7, 2018

Versions

Version

1.0.0

⊕ Add new version

Training

Training & Certification

Register for upcoming classes

| Developers | Architects | Operations |

Online instructor-led training

📅 5 days   ● ● ○ Intermediate

Aug 27, 2018 - US Pacific Time ▼

🏷 $ 3750.00 USD or 15 FTC

Continue

View schedule of all classes

Ⓜ MuleSoft.U courses (FREE self-study)

MuleSoft.U Getting Started with Anypoint Platform

MuleSoft.U Flow Design   📅 6+ hours

MuleSoft.U Development Fundamentals   📅 40+ hours

Development courses: Anypoint Studio (instructor-led)

Anypoint Platform Development: Fundamentals   📅 5 days in-person or online

Anypoint Platform Development: Mule 4 for Mule 3 Users   📅 3 days in-person or online

Anypoint Platform Development: Advanced   📅 3 days in-person or 4 days online

Anypoint Platform Development: DataWeave   📅 1 day in-person or online

August 2018 – Anypoint usage

- **CCES** (Cross Campus Enrollment System) was the 'original' CloudHub tenant
- **UCSF** – Anypoint Enterprise Edition (datacenter)
- **UCSC** – Community addition, considering CloudHub
- **UCPath** – Replacing existing platform with CloudHub
- **UCOP** – Moving existing webServices to CloudHub
- **UCMerced** – Evaluation
- **Others** (stealth mode) – 2 campuses, 3 projects

Questions?

- Thank you

- Questions?

  - Jerome.McEvoy@ucop.edu