



JD Edwards

INFOCUS

ENVISION

Positive Pay 2.0: Now with 100% more Orchestration!

Presented by:

Mo Shujaat, Grant Thornton LLP

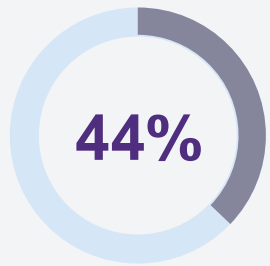
Rick Snell, Murphy USA

Session ID

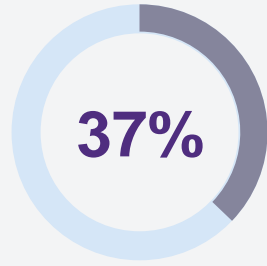
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Thriving since 1924, our U.S. firm is people-focused and purpose-driven. We believe business should be more personal and that the strongest results start with trust.

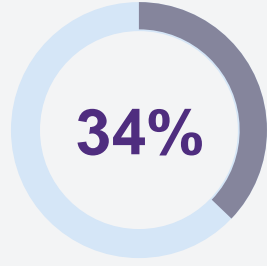
Who we serve:



Fortune 100
companies



Fortune 500
companies



Fortune 1000
companies

* Statistics as of July 31, 2020



\$1.92bn

in revenue



8,459

people, including
595 partners



53

offices

Our Oracle Practice



ERP and SCM

Financials | Revenue management | Accounting hub | Project accounting | Risk management | Project execution
Procurement | Inventory management | Cost management | Maintenance | Manufacturing | Order management | Product lifecycle and data management | Supply chain collaboration and planning



EPM Analytics

Planning and budgeting | Profitability and cost management | Financial close and consolidation | Tax reporting and provisioning
Management and operational analytics | Narrative reporting | Account reconciliation | Enterprise data management



HCM

Culture journey | Talent acquisition | Workforce administration | Talent management | Workforce development
Alumni network

Data governance & cloud integration

PaaS

Solution delivery center (off-shore and on-shore)

Industries

Construction,
Real Estate
& Hospitality

Consumer
And Industrial
Products

Energy

Financial
Services

Healthcare
And Life
Sciences

Not-For-Profit
Organizations

Private Equity

Public Sector

Technology

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About Grant Thornton JDE

JD Edwards practice – 80+ dedicated professionals in U.S.

Project management and functional expertise

- Specialized functional resources
- Project management office
- Implementations
- Upgrades
- Mobile applications
- Third party integration architecture
- Business process re-engineering
- Managed services (functional)
- User materials and training
- Financials
- Distribution
- Manufacturing
- HR / Payroll
- CAM
- Project advisory

Technical

- CNC
- Development
- Workflow
- Security management
- Technical management
- Database management
- Infrastructure / hosting
- Managed services (technical)
- Private cloud
- Disaster recovery
- Security
- Development (FRICE)

Trusted business advisor

- Gap assessment
- Transformation
- Industry point of view
- Proven methodologies
- Process excellence
- Benchmarking
- ERP governance
- Data governance
- Master data management
- Reporting strategy
- Change management
- Cloud roadmap / strategy
- FASB planning
- Chart of accounts optimization



Oracle leadership

- The Leading Oracle Platinum Partner presenter at COLLABORATE, INFOCUS and OpenWorld conferences (more presentations than any other Platinum partner in the past 3 years)
- Featured in PROFIT magazine – JD Edwards Special Issue
- Teaming with JDE product development – we work with JD Edwards on enhancing the code base for customers (e.g. OneView Reporting, Revenue Recognition, Leasing Standards, Configurator)



Experience and recognition

- More than 250 JD Edwards implementations and upgrades as a practice
- Over 20 implementations in the past 5 years
- Over 50 upgrades in the past 5 years
- 2017 JD Edwards Partner Excellence Award for **User Adoption**
- 2016 JD Edwards Partner Excellence Award for **Vertical Industries**
- Oracle JD Edwards recognized Grant Thornton with its 2014 and 2015 JD Edwards Partner Excellence Award for Outstanding **Upgrades**

About Me – Mohammad Shujaat



- Mo is a manager with Grant Thornton in the Technology Solutions practice. He has over 7 years of consulting experience, across a diverse set of companies and industries. Mo's experiences include hands on management and implementation of ERP software packages, business process reengineering and system architecture design. Mo is passionate about using JDE usability tools and orchestrations to provide customers with creative and unique solutions which help progress them on their digital journey. Mo is also experienced in blockchain solutions and has implemented machine learning solutions with JDE
- He has experience with the processes and configuration of the JDE Distribution and Manufacturing modules, specifically with the, Procurement, Sales, Inventory, Advanced Pricing, Shipping, Discrete Mfg, MTO Mfg, and Transportation. Mo also has experience with multiple releases of the software, web services, and warehouse data collection. Prior to joining Grant Thornton Consulting, Mo was an experienced consultant at an Oracle Partner

Industries

- Consumer Products
- Retail
- Metals and Mining
- Mineral Exploration Drilling
- REST integrations
- Construction & Building Materials
- Automotive Parts Manufacturing
- Metals Components
- Data Collection
- Third Party Logistics
- Inbound / Outbound Transportation
- Machine learning
- Blockchain

About Me – Rick Snell

- Rick is a Senior Software Engineer with Murphy USA, a C-store retail chain. He has over 40 years experience in data processing and likes what he sees in JDE Orchestrator. As a client-oriented data professional, Rick likes relieving users' tedium and improving business processes.
- His experience includes RPG, Cobol, CL, db2 SQL, SQLServer, and various dialects of VB. Rick loves data, and is therefore excited about making mix & match microservices to more fully unlock the potential of JDE data



Agenda

- Overview
- Background
- Journey
 - Discovery & Design
 - Building Integration
 - Challenges & How we overcame them
 - Benefits we got out of it
- Lessons Learned

Overview



Orchestrations



Once created are consumable API's via the AIS server



Log their state after each event with the AIS server



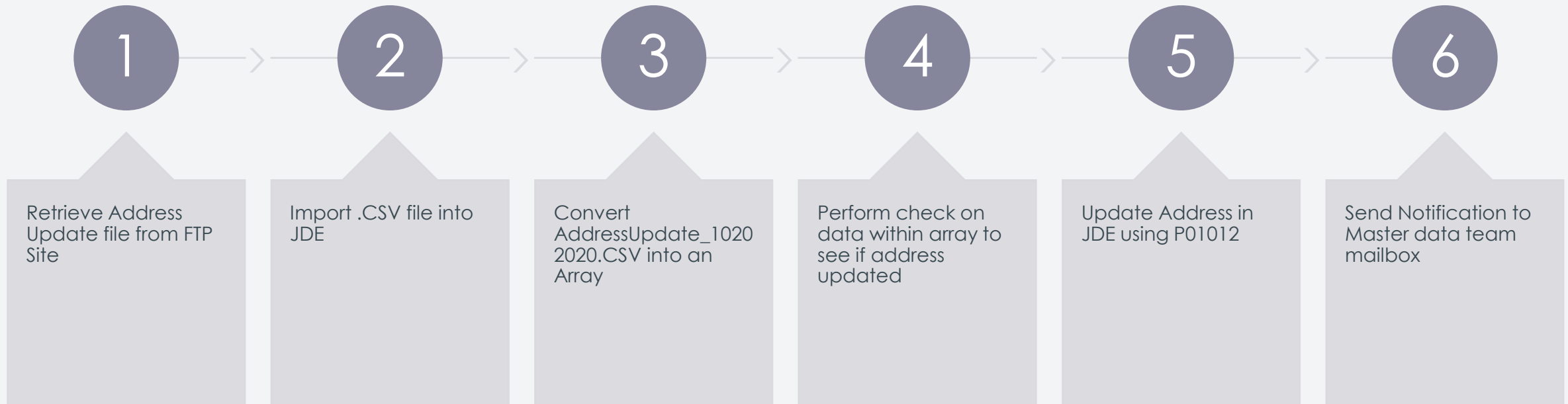
Allow Business analysis to create consumable microservices that can be used and reused



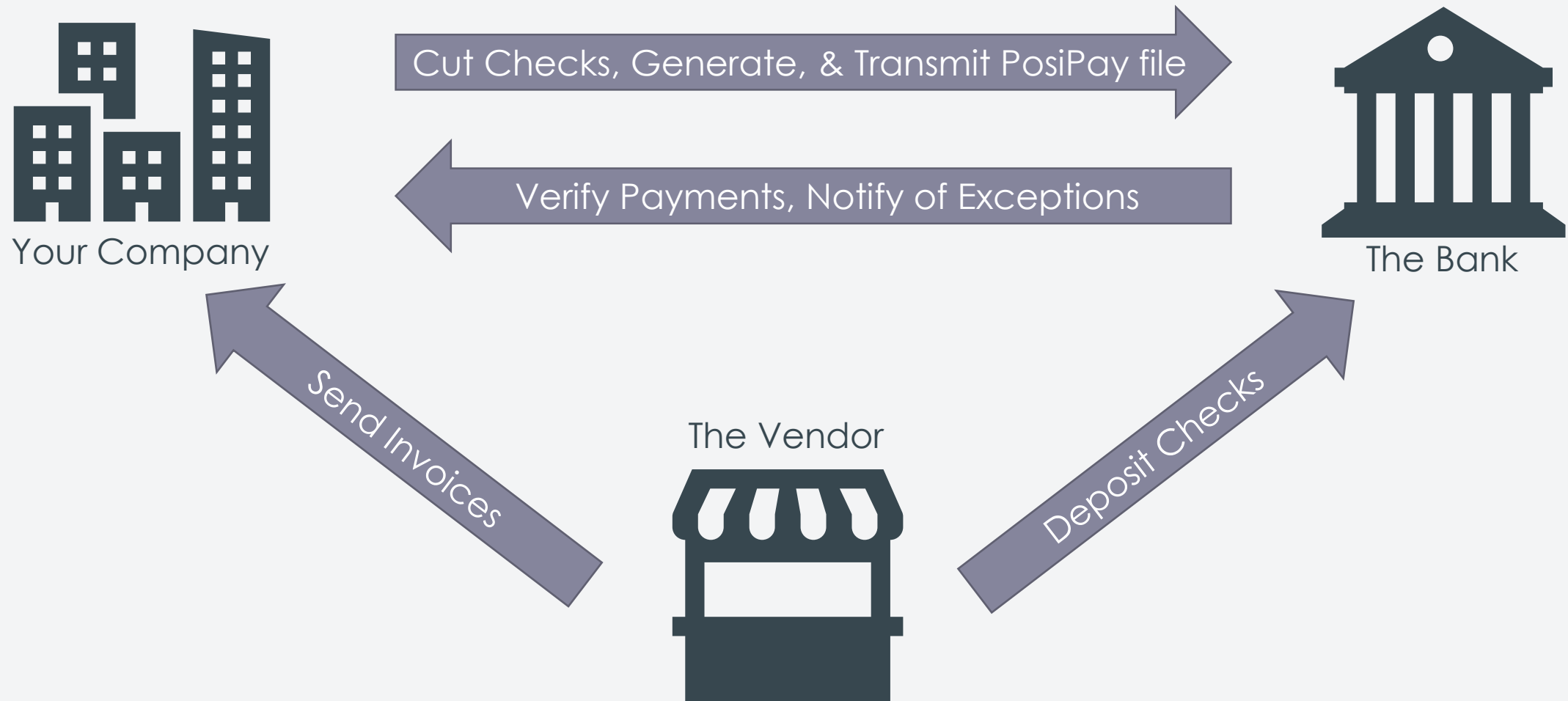
Can be daisy chained together to create even more powerful orchestrations

Secret to Orchestrator's Power, Revealed!

Stringing together smaller re-useable services to perform large complex tasks with ease!



Positive Pay Overview



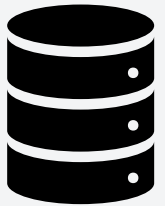
Background



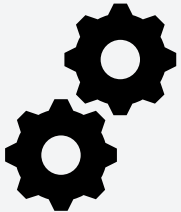
Murphy USA JDE Journey



Sep 2012: Murphy USA moved from World to E1 9.1



May 2020: Murphy USA Upgraded from 9.1 to 9.2



August 2020: Murphy USA began exploring the use of Orchestrator

Murphy USA Positive Pay



High manual processes that required someone to upload a file to the bank multiple times a week usually at the end of the day



Multiple systems were involved so the process continued to get more complicated



Visibility to file transmission, acceptance, and rejection was limited to the person who did the manual upload

Journey



Characteristics of a Great Integration



Timely: Gets data/runs processes/does stuff in the right place, at the right time



Consistent: Performs the same way every time (99.99%* of the time)

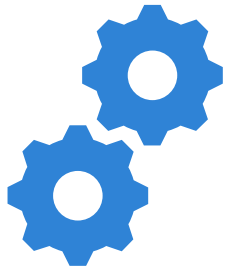


Communicative: Notifies appropriate stakeholders of events, exceptions, successes, and failure



Self-Sustaining: Integration should be able to operate on its own without human intervention

Project Goals



Automated end to
end process



Scheduled
transmission



Real time
notifications

Journey Overview

- MUSA was also going through Agile training to shift their project delivery to a more Agile framework
 - This aligned well with Orchestrations
 - In our experience – Agile/Iterative design methodologies work best for orchestrations

01

Qualify

- Qualify whether Orchestrator is the right solution for the use case

02

Understand

- Understand how your integration will need to evolve & change over time

03

Place

- Ensure the integration fits into your overall systems integration strategy

04

Plan

- Plan your roadmap in advance
- Embrace MVP concept

05

Deliver

- Consider how your integration should execute its tasks
- Determine How stakeholders will interact with inputs & outputs

Design Requirements

Real time
notifications of
acceptance

Real time
notifications of
exceptions

Real time
transmissions
of file

Real time
notifications of
transmission

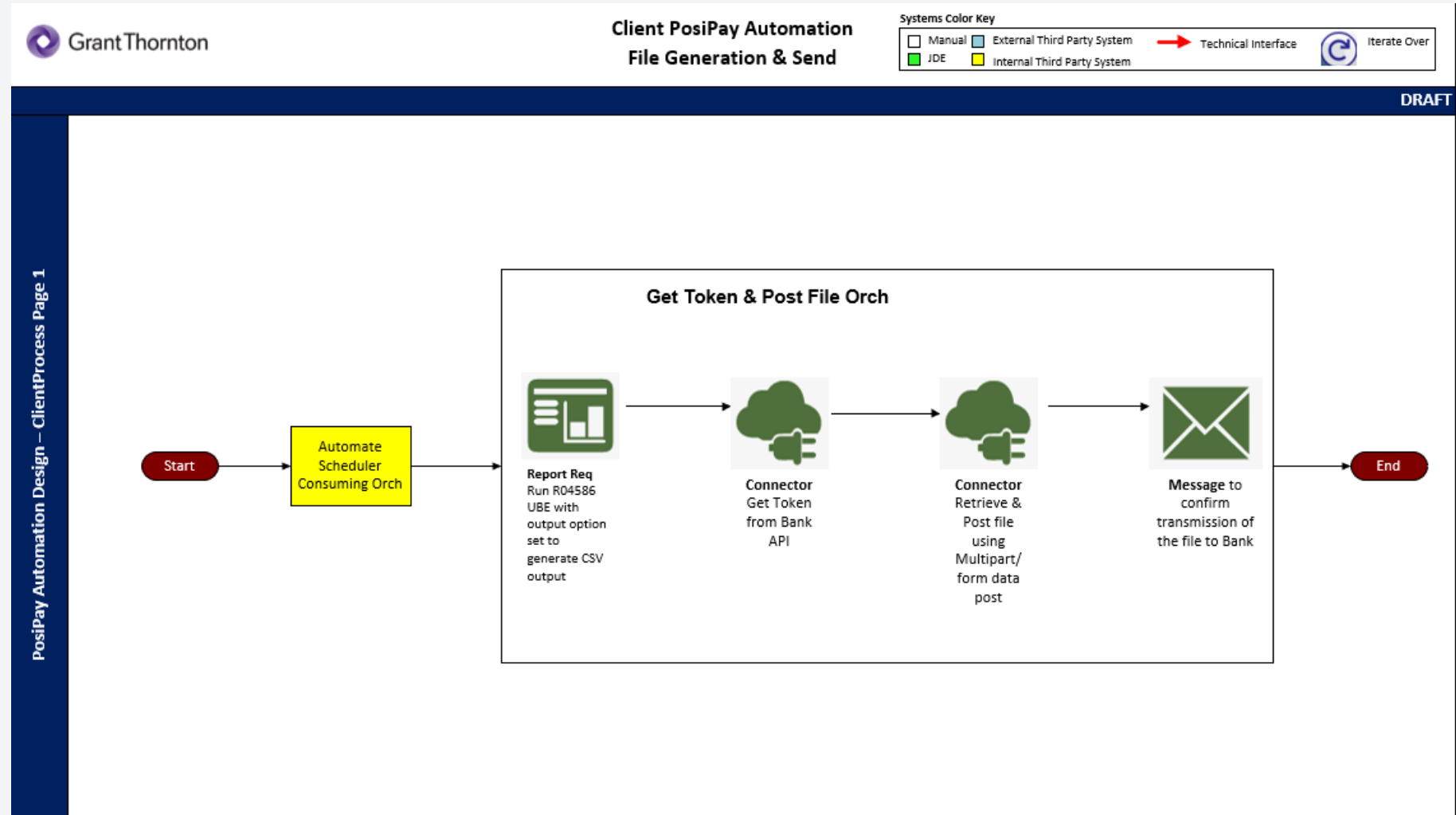
Automated
Generation of
file

Automated
Transmission of
file

Scheduling of
Processes

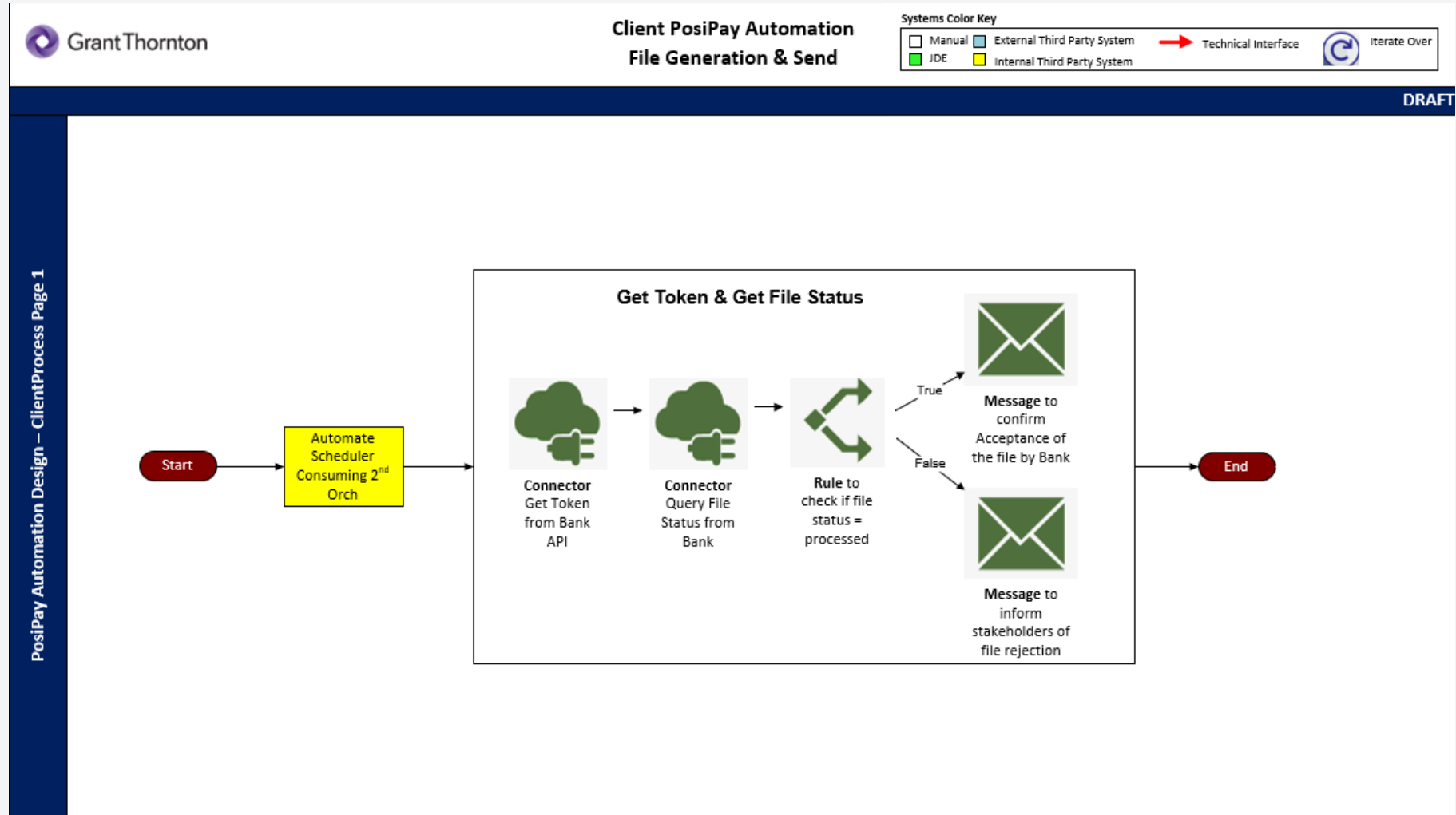
Design – Orch #1

- Orch 1 of 2
- Scheduled
- Runs R04586 – UBE
 - File Output = CSV
- Retrieves access token from the bank
 - Basic Auth
 - 20 Min Timeout
- Posts File using Connector Service Request
 - Multi-Part/Form Data Post
- Message Service Request once File has been transmitted



Design – Orch #2

- Orch 2 of 2
- Scheduled
- Retrieves access token from the bank
 - Basic Auth
 - 20 Min timeout
- Retrieve File status using Connector Service Request
 - POST
- Message Service Request to convey file acceptance
- Message Service Request for file rejection



Rubber meets the road



“Everyone has a plan, until they get punched in the face”

– *Mike Tyson*

Swagger

- The bank provided MUSA with their API Swagger
 - Familiarized with their APIs
 - Test & Build request statements
- Can also be created for JDE Orchestrations easily!
 - Great way to build & share an API toolkit to your customers, vendors, partners

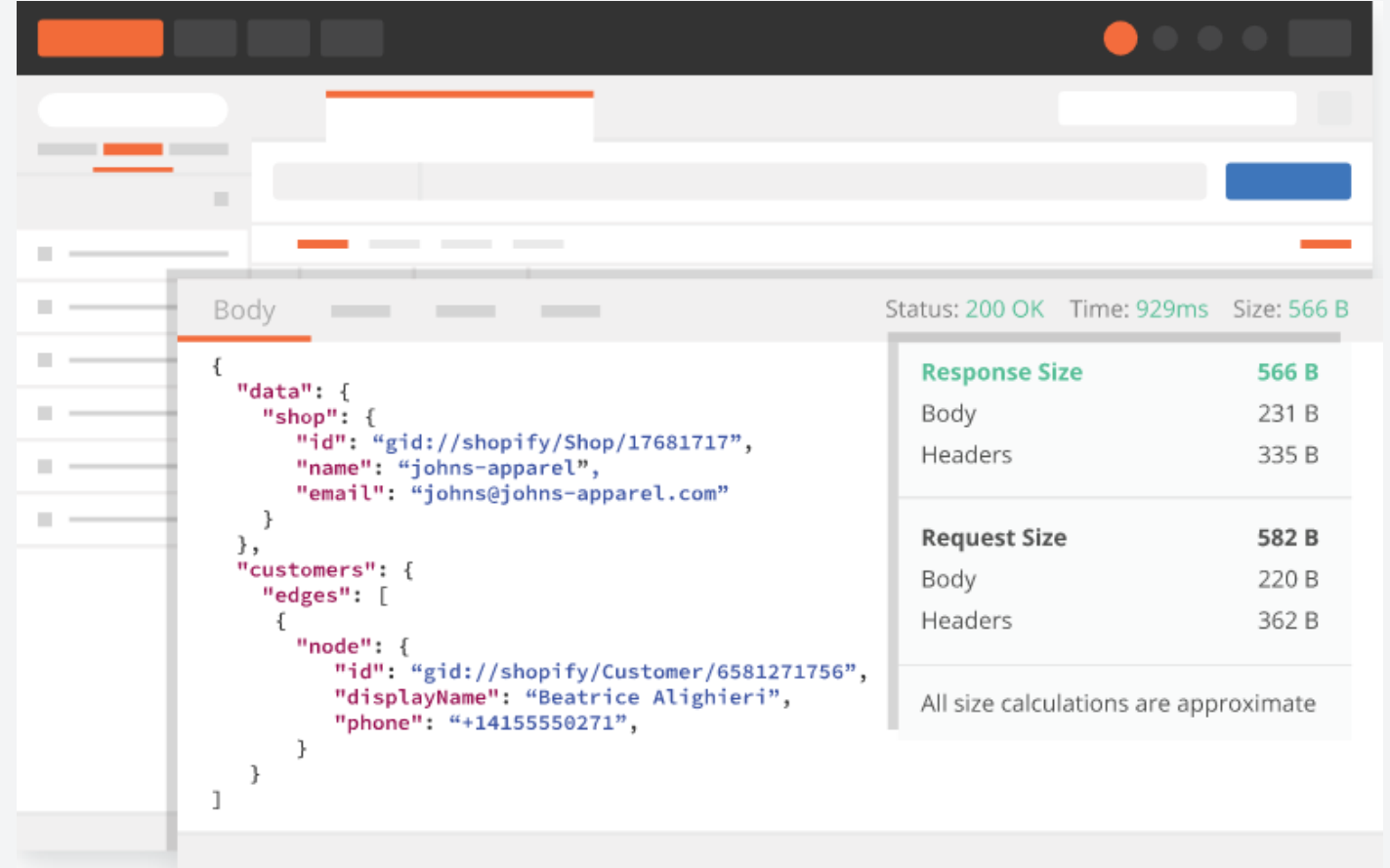
The screenshot shows the Swagger Petstore API documentation page. At the top, it says "Swagger Petstore 1.0.5" with a version badge. Below this, it provides the base URL: "petstore.swagger.io/v2" and a link to the Swagger JSON file. A note mentions a sample server and a special key for authorization. There are links for "Terms of service", "Contact the developer", "Apache 2.0", and "Find out more about Swagger".

Below the header, there is a "Schemes" dropdown menu set to "HTTPS" and an "Authorize" button. The main section is titled "pet Everything about your Pets" with a link to "http://swagger.io". It lists several API endpoints:

- POST** `/pet/{petId}/uploadImage` uploads an image
- POST** `/pet` Add a new pet to the store
- PUT** `/pet` Update an existing pet
- GET** `/pet/findByStatus` Finds Pets by status
- GET** `/pet/findByTags` Finds Pets by tags
- GET** `/pet/{petId}` Find pet by ID
- POST** `/pet/{petId}` Updates a pet in the store with form data
- DELETE** `/pet/{petId}` Deletes a pet

Postman

- Used a third party API testing tool first
 - Postman
 - Allowed us to get familiar with consuming REST APIs
- Provided us with prebuilt Code templates to use



Challenges

- Once we started to build, we encountered some challenges along the way...

Java issues with AIS

- Limited to MUSA environment, other environment worked with no issues
- Delayed AIS troubleshooting...for now!
- Explored temporary alternatives

Our Mindset

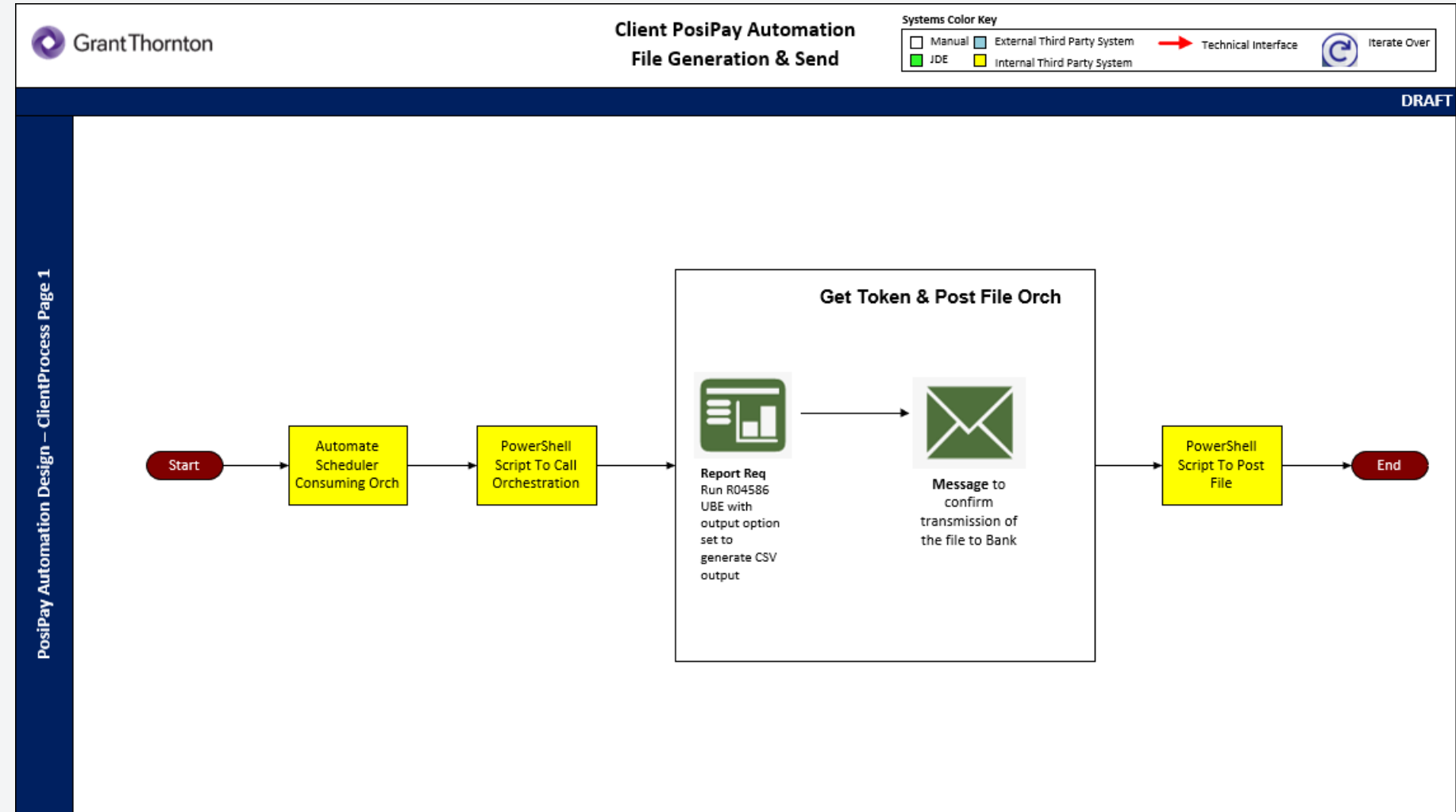
- Learning curve on a new tool
- Expectations from the tool
- Different people picked up things at different paces

Timeline considerations

- Replaced with hybrid Orchestration/PowerShell solution to Generate & Transmit file
- Continue to use Orchestrations for Status check & Notifications

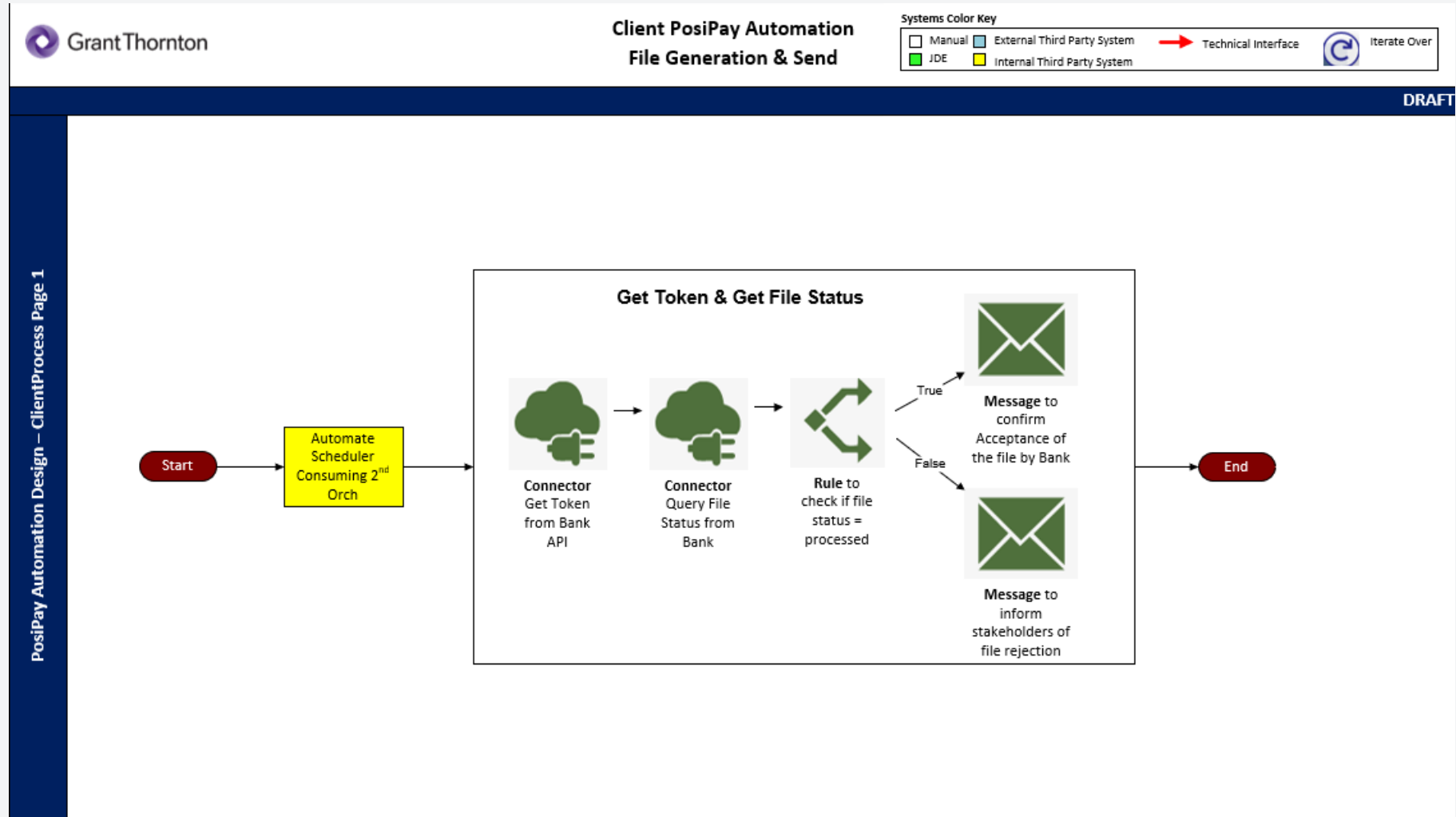
Build – Orch #1

- Orch 1 of 2
- PowerShell script used instead of connector service request
 - JAVA issue within MUSA environment
 - Time constraints to investigate JAVA issues
- Orchestrator still had to be used to generate the UBE output in CSV



Build – Orch #2

- Orch 2 of 2
- No API or JAVA issues with Orchestration #2
- File status connector request passed back file location
- Orchestration being used to send acceptance or rejection notifications to the appropriate stakeholders



Challenges

- Once we finished build, we encountered some other challenges...

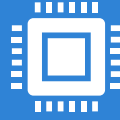
UDO Promotions

- Process
 - 02 -> 05 -> 08
- Publishing/Reserving
- Platform to manage

Last Minute File format Changes

- Due to bank limitations
- Changed from CSV to Text!
- Used CL program to generate text file

Overcoming Challenges



Orchestrator still at the center of the solution to generate & transmit the positive pay fields



Operationalized transmission success messages



Utilize Microservices architecture & design principles wherever possible



Operationalized exception handling messages to inform:

IT, business, service desk

Wins



Wins



Great use case to get our feet wet with Orchestrations & start an Orchestration ?program?



Learned about how orchestrator can extend JDE functionality



Automated a manual processes and increased visibility to this process across the organization



Established testing guidelines with the bank to avoid disruptions to future endeavors

Lessons Learned



Qualify & Design



Compartmentalize your integration

It's not a contest to write the biggest & most complex orchestration!
Break the logic out into reusable, logical chunks of functionality

- Orchestra example



Keep it simple

Don't try to overcomplicate things

- Transformations



Don't try to fit a square peg in a round hole

What should happen in a UBE, should stay in a UBE!

Lessons Learned

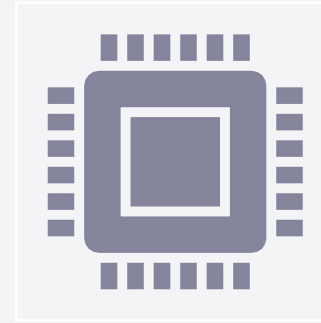


Create Re-useable microservices to save future work

Compartmentalize

Specialize

Follow the Ron Swanson Model!



Microservices Architecture – Integrations as a service

Microservices can be used repeatedly as new systems are added into your ecosystem

Resulting in a lower cost to create & serve for each new integration between a 3rd party system & JDE

Lessons Learned



Road mapping for your Orchestrations

Phase 0 – Prove it out

Phase 1 – Delivery of Must & Should Have Features

Phase 2 – Delivery of Could & Wish to have features



Minimum Viable Product Methodology for Orchestrations

What are my required features?

What can I delivery first to satisfy users?

What can I add on later so the user sees continuous improvement?

Lessons Learned

1

Expect the unexpected

- Unexpected issues can derail your idea

2

Have no sunk cost – when not prohibitive!

- Pivot & change, especially with a fast tool like orchestrator

3

Learn to be creative

- Orchestrator enables creative solutions - you dream it, we build it!

4

Don't let our perfect get in the way of everyone's good

- Spending too much time perfecting an item can get in the way of progress

Into the future



Q & A



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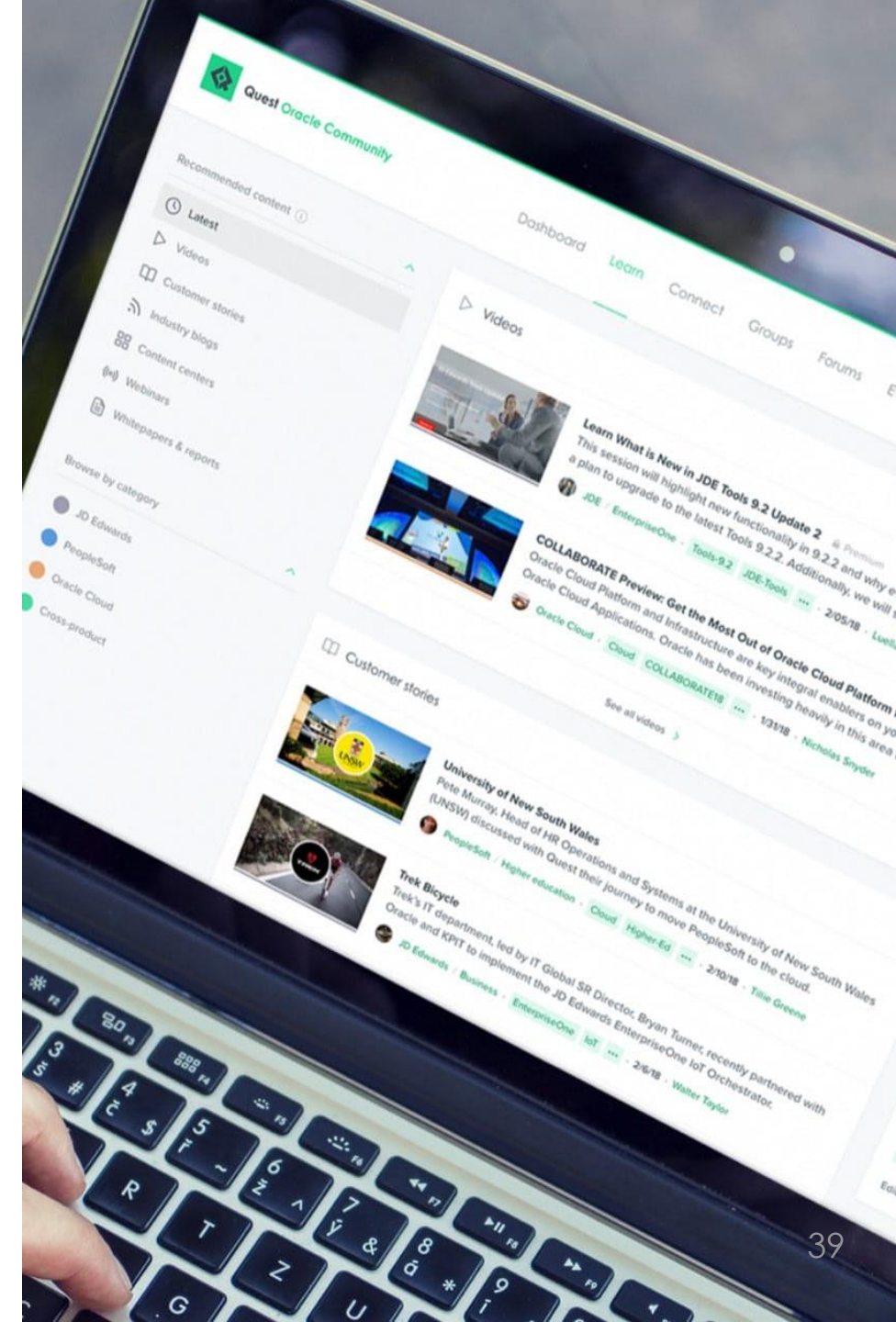
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