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The Next-Generation BPM for a Big Data World:
Intelligent Business Process Management Suites (iBPMS)

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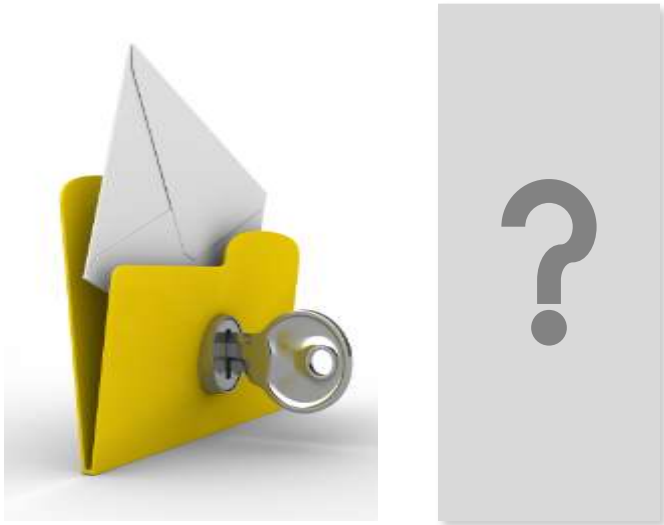Xing / LinkedIn → Please connect!

Main Tasks

Requirements Engineering

Enterprise Architecture Management

Business Process Management

Architecture and Development of Applications

Service-oriented Architecture

Integration of Legacy Applications

Cloud Computing

Big Data

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Consulting
Developing
Coaching
Speaking
Writing

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!

These opinions are my own and do not necessarily represent my employer

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Intelligent Business Processes use Big Data / Fast Data Analytics!

Integration and Separation of Concerns are inevitable!

Social Integration becomes prevalent for supporting occasional users!

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— Big Data Paradigm Shift

— Use Cases for Big Data and Fast Data

— Intelligent Business Processes

— Technology and Product Perspective

— Implementation of an Use Case

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> # "If you can't measure it, you can't manage it."
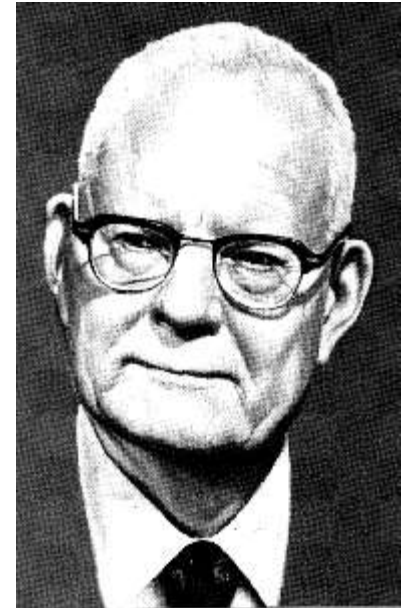
William Edwards Deming
(1900 –1993)
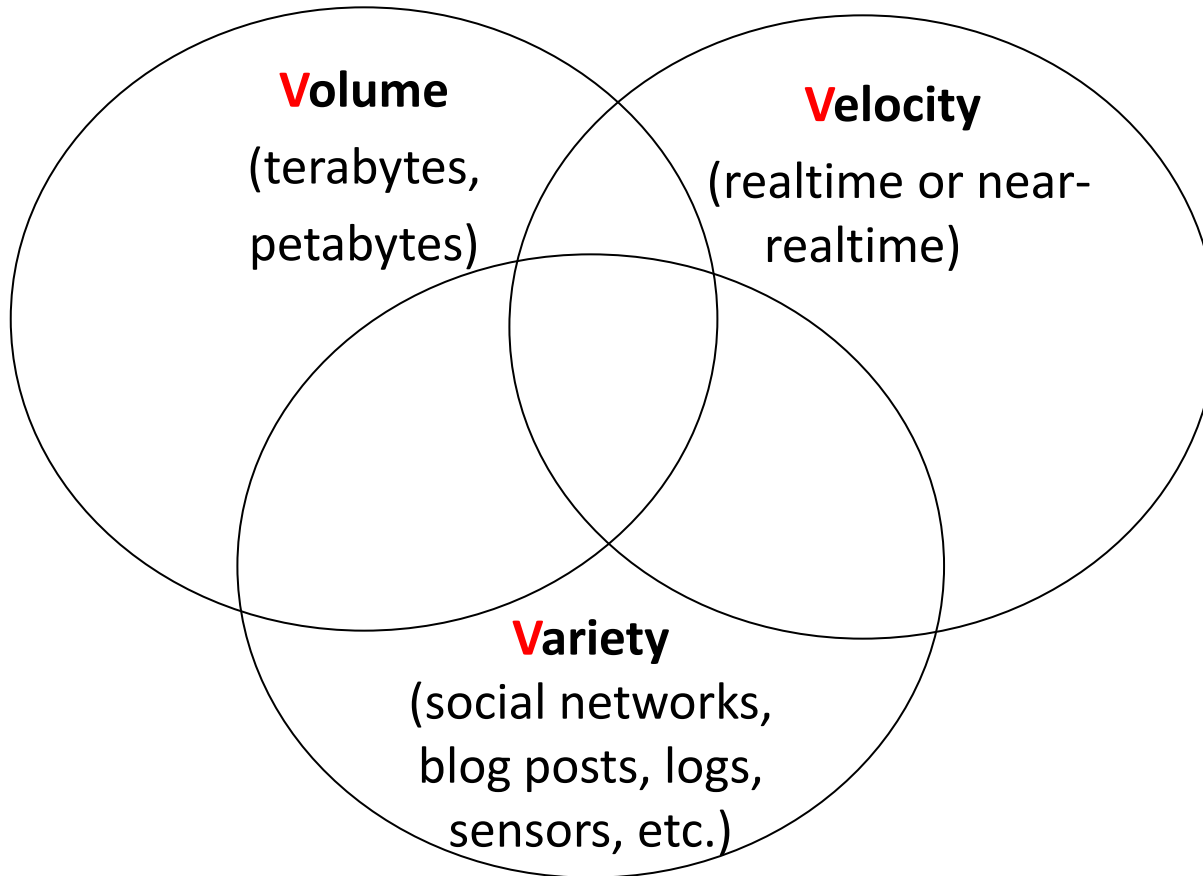American statistician, professor,
author, lecturer and consultant

→ „Silence the HiPPOs" (highest-paid person's opinion)

→ Being able to interpret unimaginable large data stream, the gut feeling is no longer justified!

Harvard Business manager
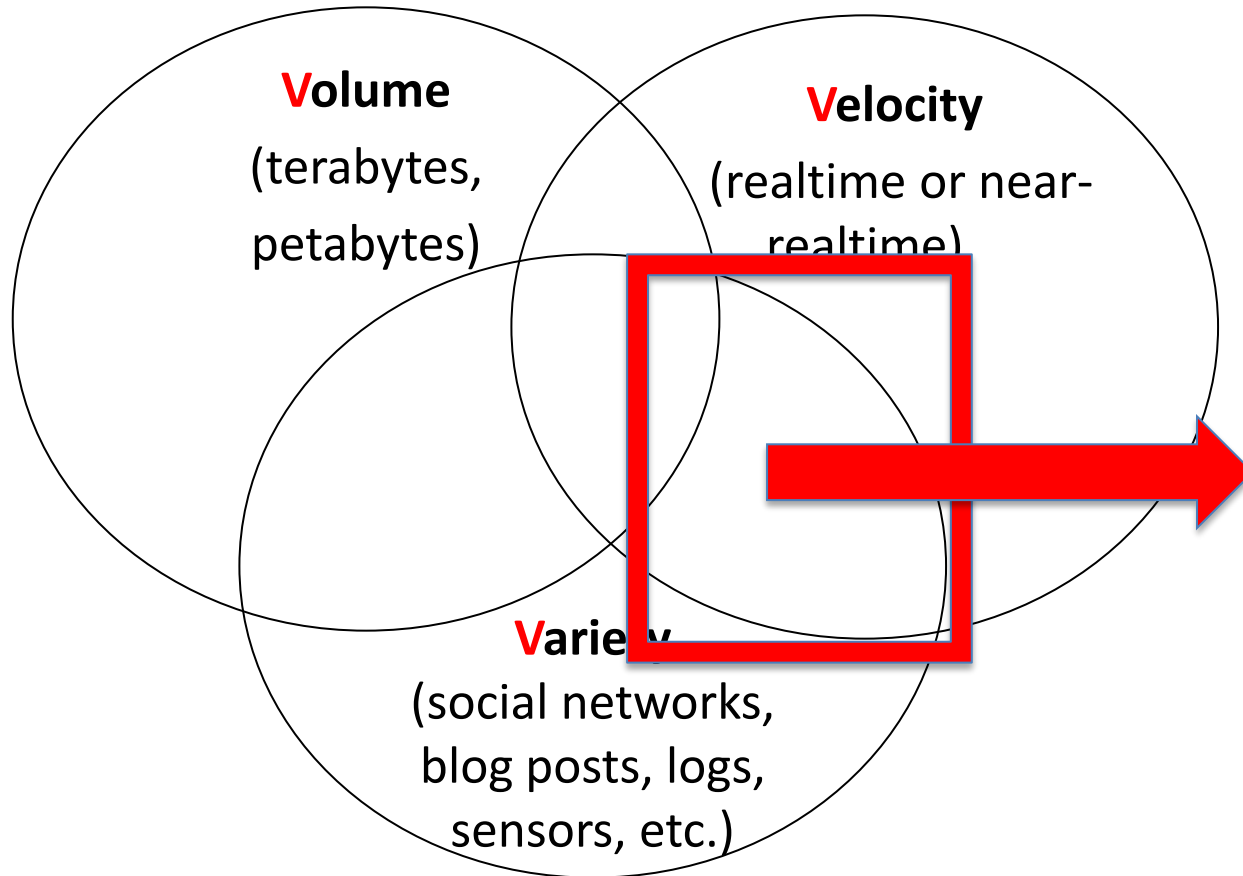DAS WISSEN DER BESTEN

ERIK BRYNJOLFSSON AND ANDREW MCAFEE
Erik Brynjolfsson is the Schussel Family Professor at MIT's Sloan School of Management and director of its Center for Digital Business. Andrew McAfee is principal research scientist at the Center. They are the coauthors of Race Against the Machine (Digital Frontier Press, 2012).

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Volume
(terabytes, petabytes)

Velocity
(realtime or near-realtime)

Variety
(social networks, blog posts, logs, sensors, etc.)

Value

ROAD TO OPPORTUNITY

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Volume

(terabytes, petabytes)

Velocity

(realtime or near-realtime)

Variety

(social networks, blog posts, logs, sensors, etc.)

Big Data
Is NOT always about Volume…

Fast Data is often more important for creating business value!

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The Value of Data decreases over Time
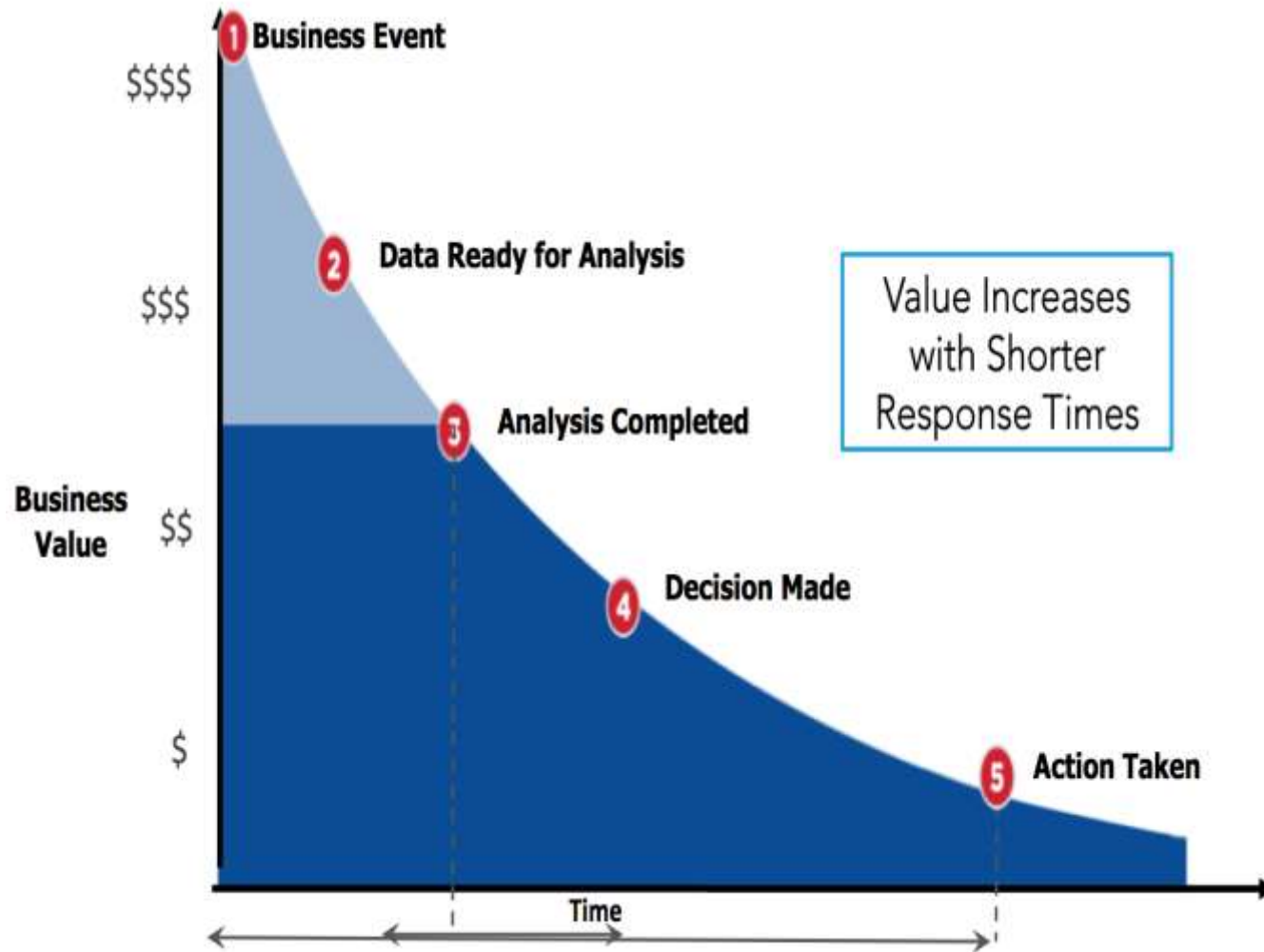
Deduce Customer Defections

T-Mobile USA has integrated Big Data across multiple IT systems to combine customer transaction and interactions data in order to better predict customer defections. By leveraging social media data (Big Data) along with transaction data from CRM and Billing systems, T-Mobile USA has been able to "cut customer defections in half in a single quarter".

http://hkotadia.com/archives/5021 (No TIBCO Reference)

- Situation: Top 20 Gaming Site
  - Dynamic virtual world, in-game commerce
  - 21 million registered accounts
- Problem: More Users, More Data, More Attacks
  - With rapidly increasing usage, the company was dealing with large volumes of data. More users draw more interest from online commerce fraud, often done in real-time
- Solution: Real-Time "Coprocessor" for Big Data
  - Hadoop / Netezza / MicroStrategy used for discovery based on history; StreamBase used in parallel to execute automated decisions based on known patterns of fraud, phishing, and proactively alert and monitor for operational outages.
- Impact: Millions in Cost Savings and More Efficient Operations
  - Site can now stop malicious activity before it impacts the business, and monitor site operations in real-time, increasing client satisfaction, retention, and stickiness.

Yellow Submarine in the virtual world

Real-Time Big Data
- Fraud detection
- Phishing detection
- Operations monitoring
- Real-time ETL
- Social media analytics

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- With revenue of almost USD 30 billion and a network of 800 locations, Macy's is considered the largest store operator in the USA

- Daily price check analysis of its 10,000 articles in less than two hours

- Whenever a neighboring competitor anywhere between New York and Los Angeles goes for aggressive price reductions, Macy's follows its example

- If there is no market competitor, the prices remain unchanged

http://www.t-systems.com/about-t-systems/examples-of-successes-companies-analyze-big-data-in-record-time-l-t-systems/1029702 (No TIBCO Reference)

MGM RESORTS INTERNATIONAL™

"With 38 million fans, MGM knows how to put its customers first, it takes more than a smile too. Customers want a personalized, tailored experience, one that knows their name and can anticipate their needs. With the help of TIBCO technologies that leverage big data and give customers a digital identity, MGM can send personalized offers directly to customers, save them a seat, and have their favorite drink on the way. With multiple customer touch points and channels, MGM can reach customers in more ways, and in more places, than ever before."

Big Data Even Processing (→ Fast Data):
- Correlate
- Analyze
- Action

In-Memory Computing (→ Fast Data):
- Enable Real Time
- Only customers that have checked in

https://www.youtube.com/watch?v=X-7S3kCOx9k

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- How do you put this Big Data easily in the hands of the people that need it?

- Processing and analyzing Big Data is only one part of the solution…

- Making the data "actionable" is the real challenge!

- Seeing the information that helps make a decision on a composite dashboard is just the first step and where too many companies stop.

- A business must be able to fire off the business process to execute the decision made regarding the data.

Data-Driven BPM: Making "Big Data" Actionable

Posted by:

Posted February 13, 2013   1   comment

Like it?

👍 24   Keywords: business process management, cloud, data in the cloud, data integration, real time, Data Warehousing, Knowledge Management, Cloud Computing, Data Mining, Big Data, Data Management

Matt Davies

Posts   Profile

Comments   Follow

http://smartdatacollective.com/matt-davies/104576/data-driven-bpm-making-big-data-actionable

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- Big Data Paradigm Shift

- Use Cases for Big Data and Fast Data

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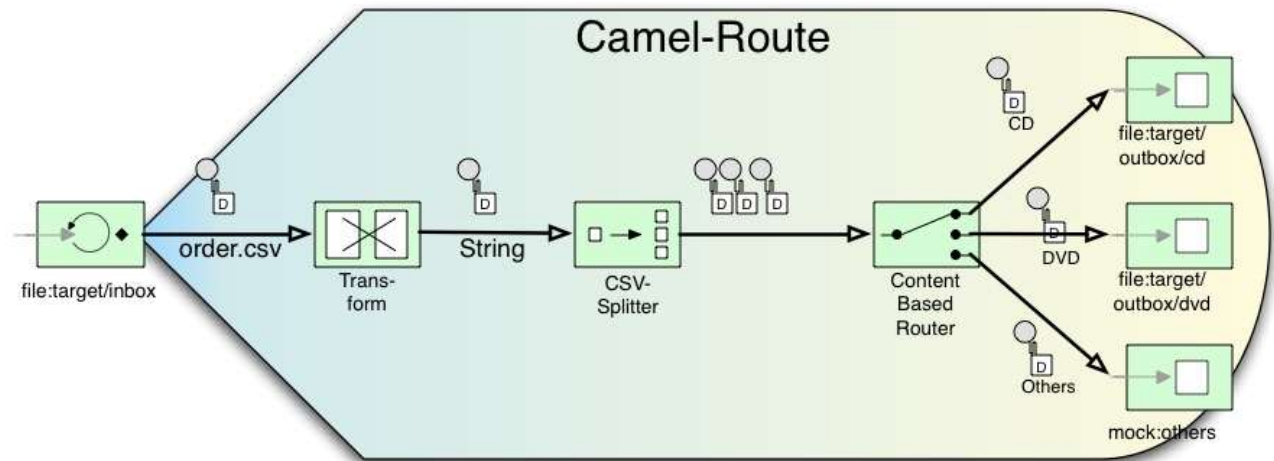- Humans have to interpret large data to make decision. Using gut feeling is nothing but gambling.

- Just doing Big Data analytics is not enough. Systematic and monitored human interactions are as important to get best outcomes.

- An Intelligent Business Process combines Big Data, Analytics and BPM. This enables applications and humans to make data-driven decisions based on big data analytics.

- „Process starts Action" (e.g. Recommendation Engine) vs. „Data starts Action" (e.g. Prevention of Flu Epidemic)

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Script Task

Service Task

Log Order

Transform Order

Confirm Order

Groovy
JavaScript
etc.

SOAP Web Service

Everything
from Cobol
to Ruby...

... or a
„Big Data
service"

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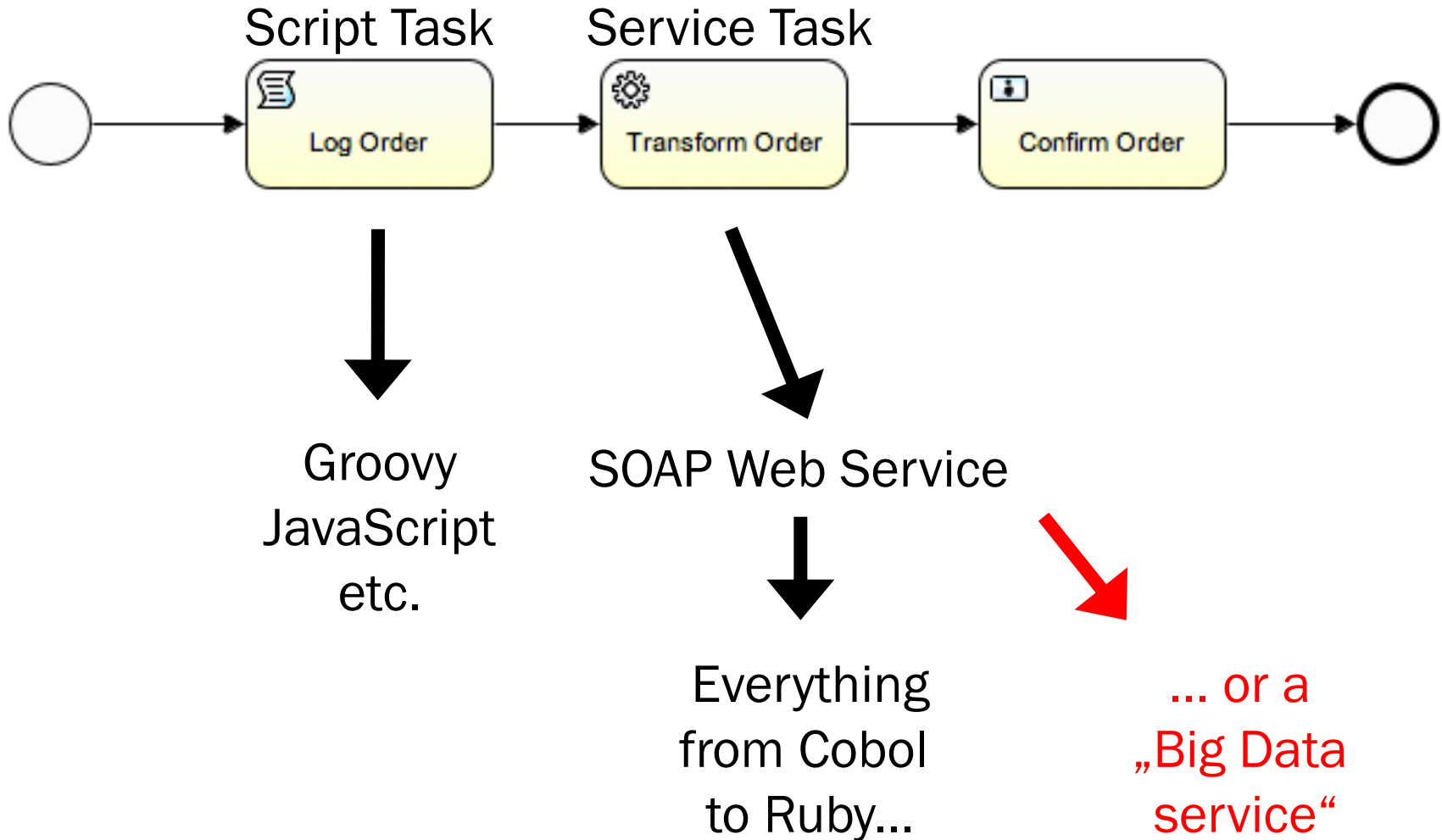
iBPMS is a term introduced by Gartner (information technology research analysts) to indicate the evolution of the classic BPMS into the next-generation BPM, which includes Integration of Big Data Analytics into organization's processes, social media, and mobile device support, in the process's context.

https://www.gartner.com/doc/2684315/magic-quadrant-intelligent-business-process

Separation of Concerns

Integration

- Mapping and Transformation
- Connectivity / adaptors to connect to external systems using a variety of different protocols
- Legacy, COTS, Cloud, Custom Applications
- Predefined Enterprise Integration Patterns for message routing
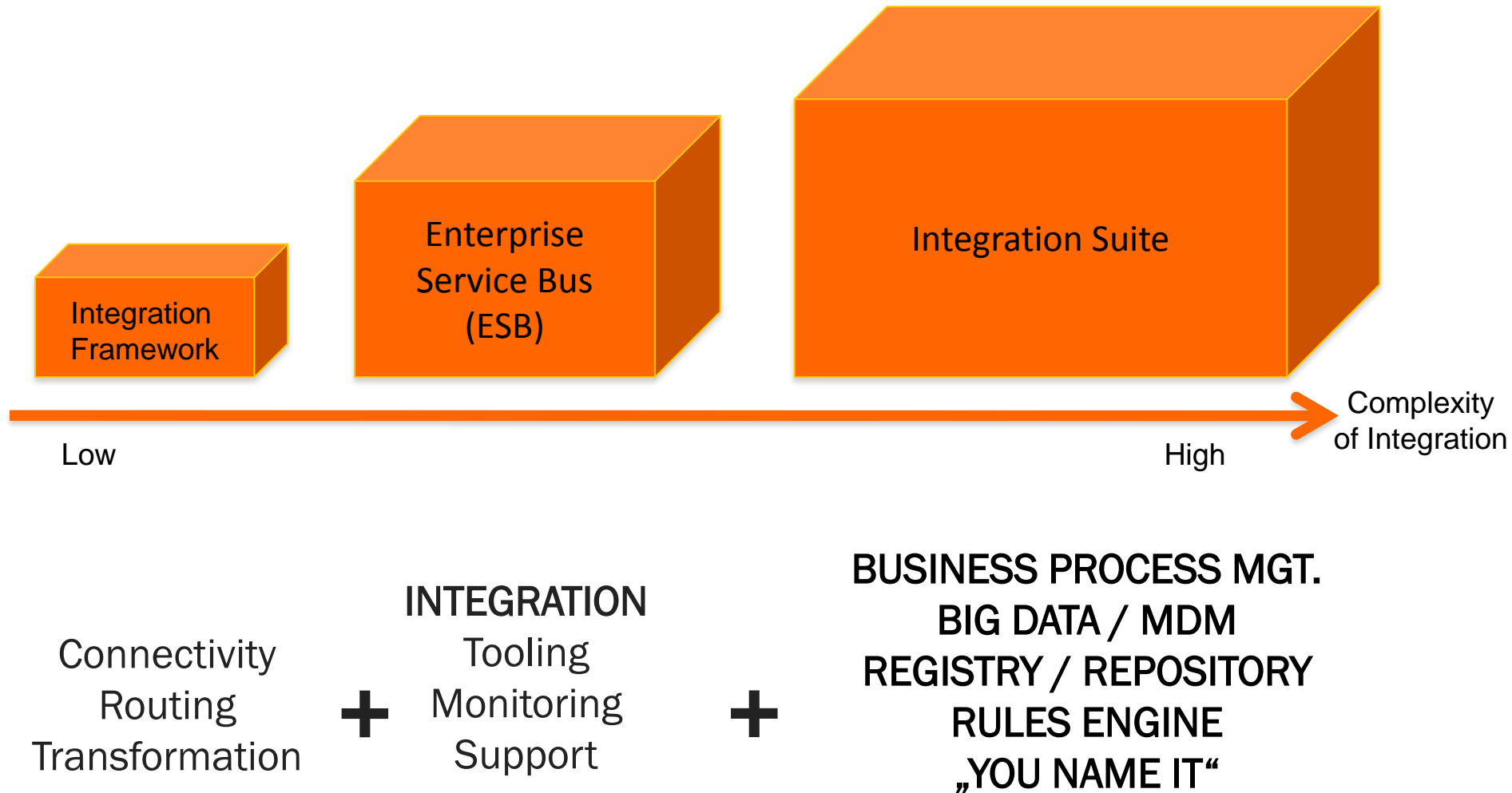- Social and Mobile Platforms

Big Data

- Processing data en masse (big data) and / or with high speed (fast data)
- Analytics

BPM

- Do queries to make decisions
- Human or machine

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ESB Example: TIBCO BusinessWorks

Adapters, Services, Processes, Deployment, Management

Fully Integrated Test Environment

Drag-n-Drop Access to Resources

Graphical Process Modeling

Native Standards based XSLT Mapper

Intuitive graphical design environment streamlines
time and cost of development and training

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Big Data

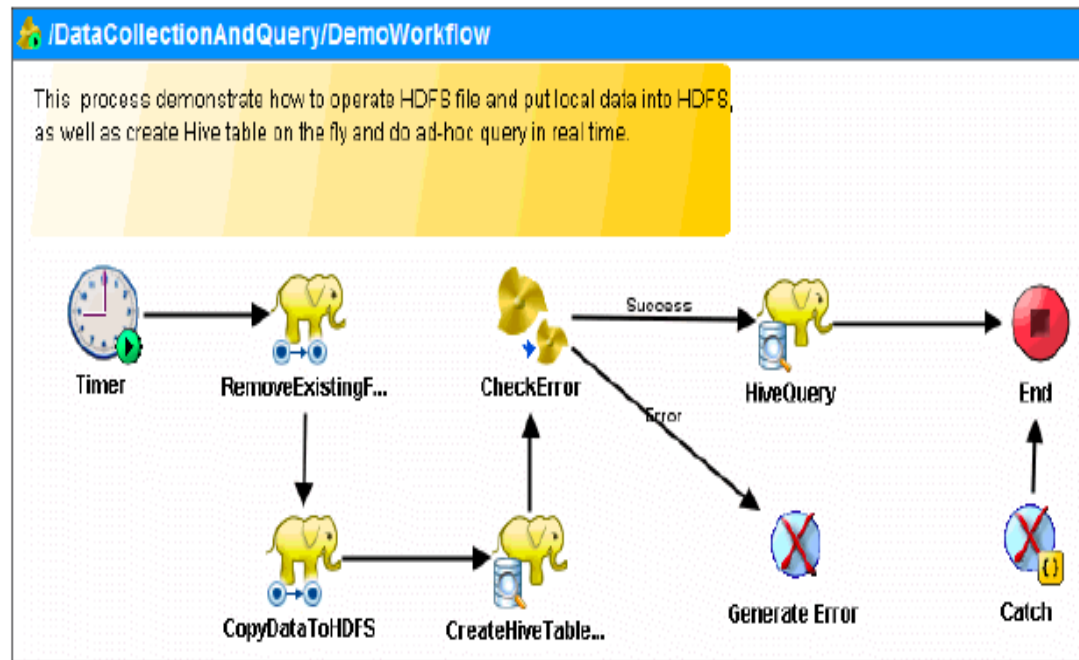- Processing data en masse (big data) and / or with high speed (fast data)
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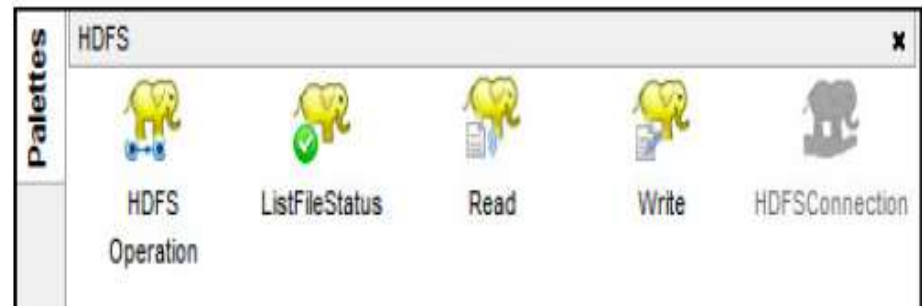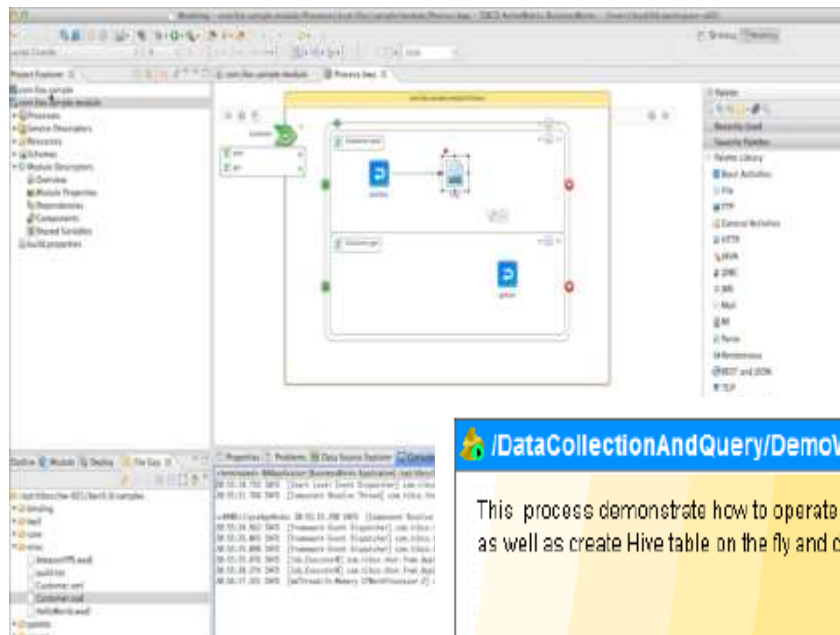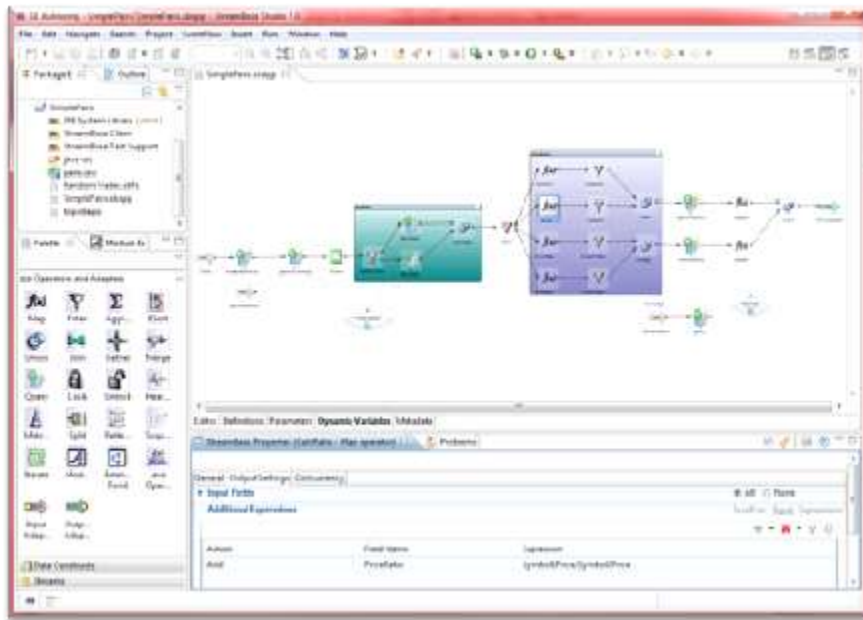- Do queries to make decisions
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The defacto standard for big data processing
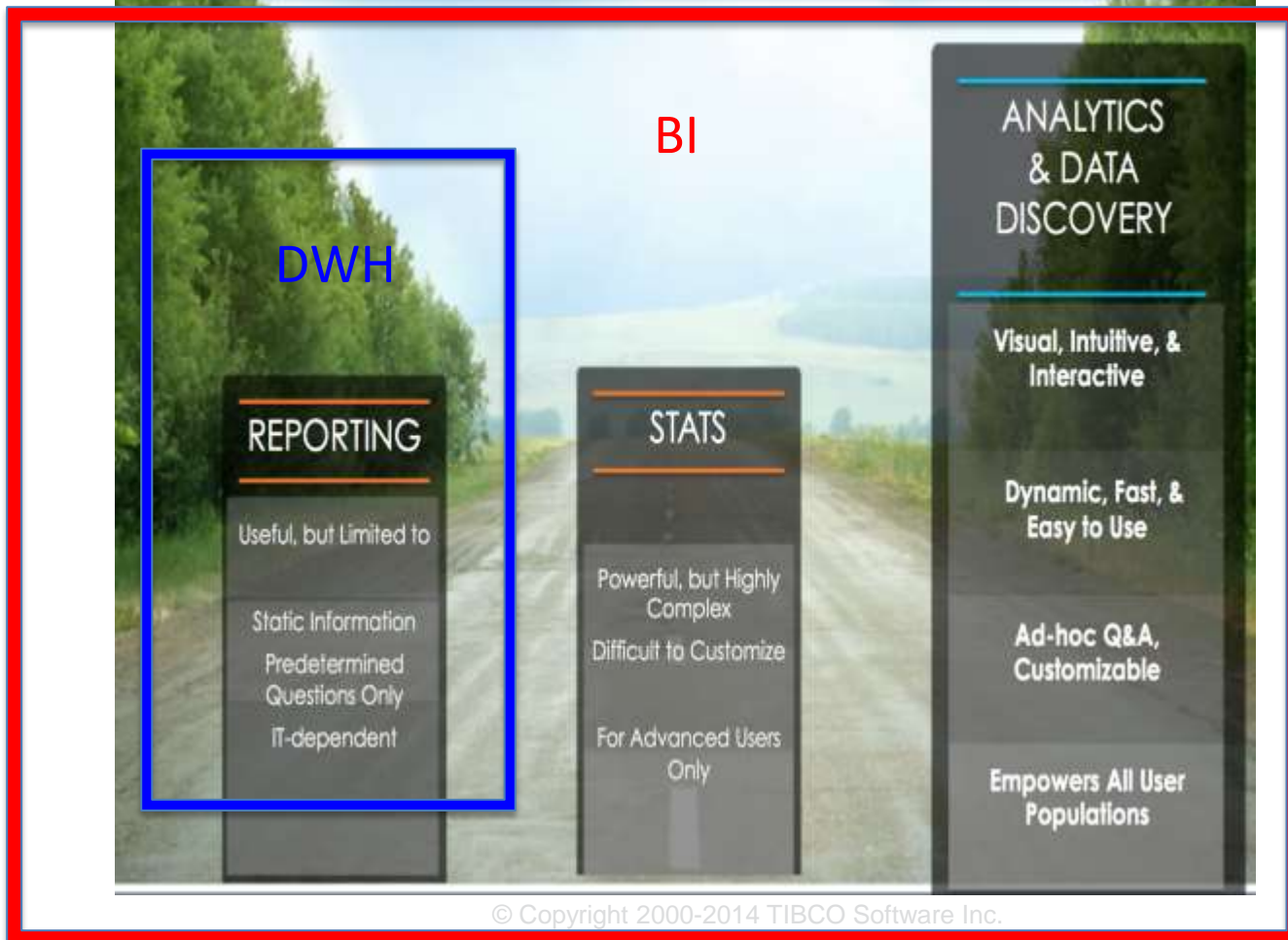
StreamBase Development Studio

- Visual Development
- Visual Debugging
- Feed Simulation
- Unit Testing

StreamBase LiveView Data Mart

- Real Time Analytics and Visualization
- Ad hoc queries
- Alerts and Notifications
- Web, Mobile and API Integration

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> "...visualization-based data discovery tools have far-reaching implications for how business information is consumed....end-user organizations should adopt as a way to improve the success of their BI program." **- Gartner**

BI

DWH

REPORTING

Useful, but Limited to

Static Information

Predetermined Questions Only

IT-dependent

STATS

Powerful, but Highly Complex

Difficult to Customize

For Advanced Users Only

ANALYTICS & DATA DISCOVERY

Visual, Intuitive, & Interactive

Dynamic, Fast, & Easy to Use

Ad-hoc Q&A, Customizable
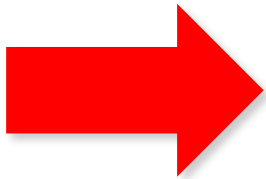
Empowers All User Populations

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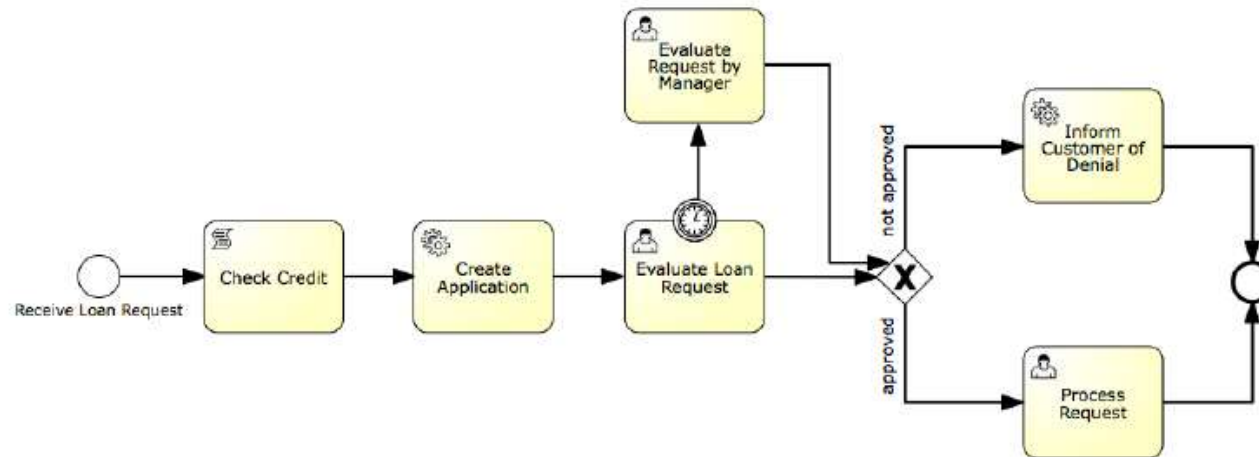- Analytics

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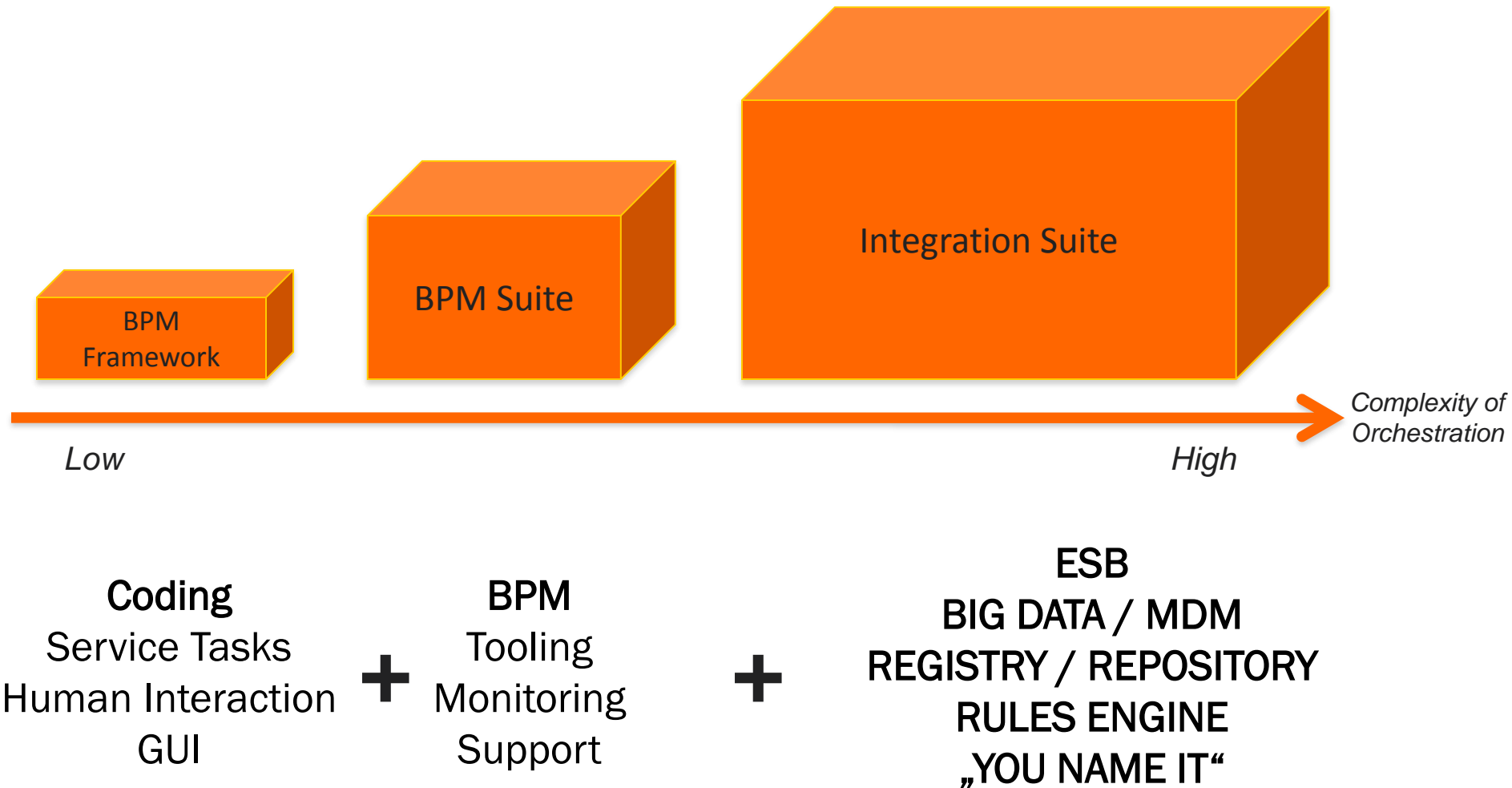- Human or machine

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„Business Process Model and Notation (BPMN) is a graphical representation for specifying business processes in a business process model.“

Wikipedia

Kai Wähner

Complexity of Orchestration

Low   High

Coding
Service Tasks
Human Interaction
GUI

+

BPM
Tooling
Monitoring
Support

+

ESB
BIG DATA / MDM
REGISTRY / REPOSITORY
RULES ENGINE
„YOU NAME IT"

BPM Framework

BPM Suite

Integration Suite

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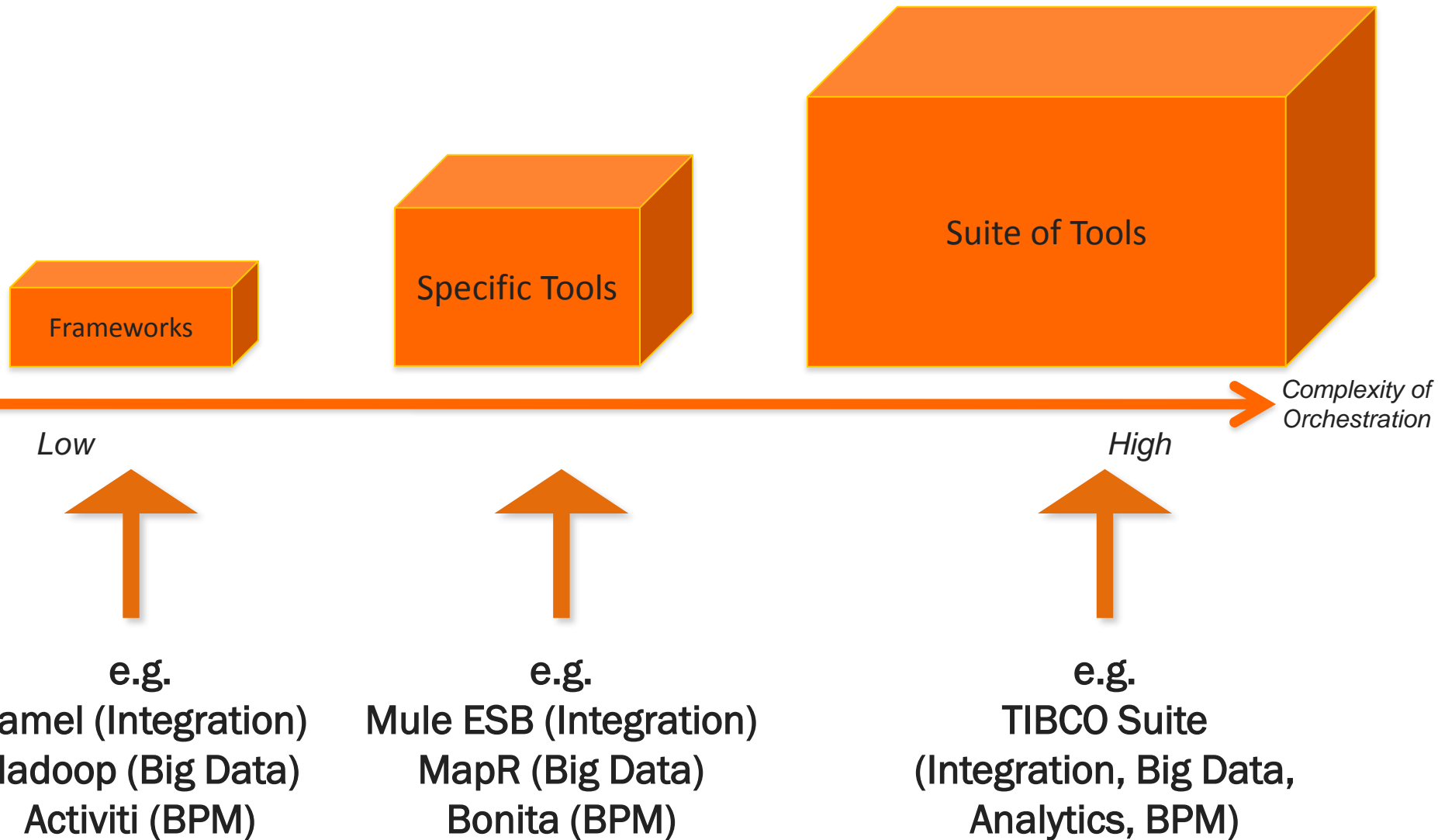- Social and Mobile Platforms

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Let's realize it !!!

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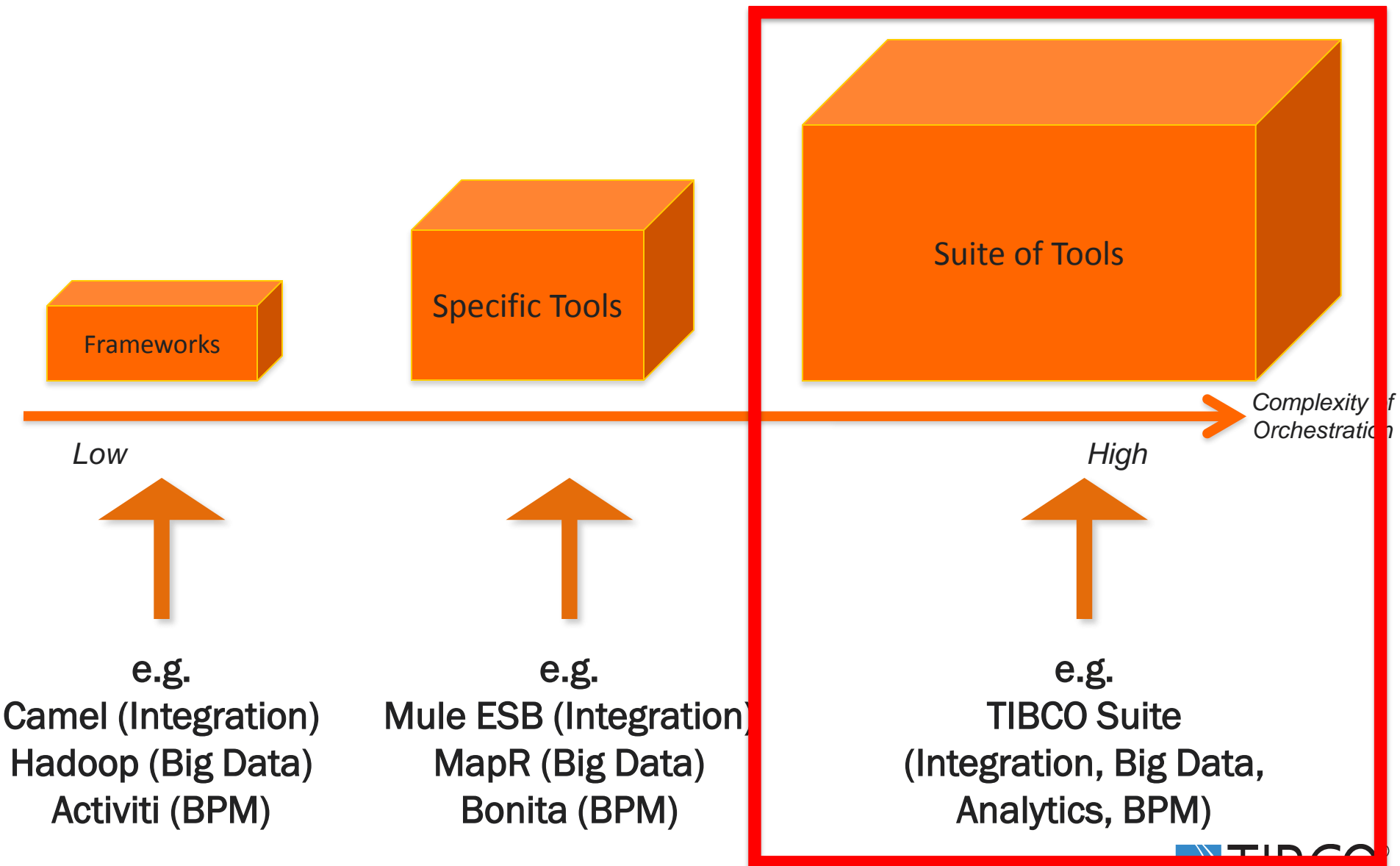
Fast Data Event Processing:
- Correlate
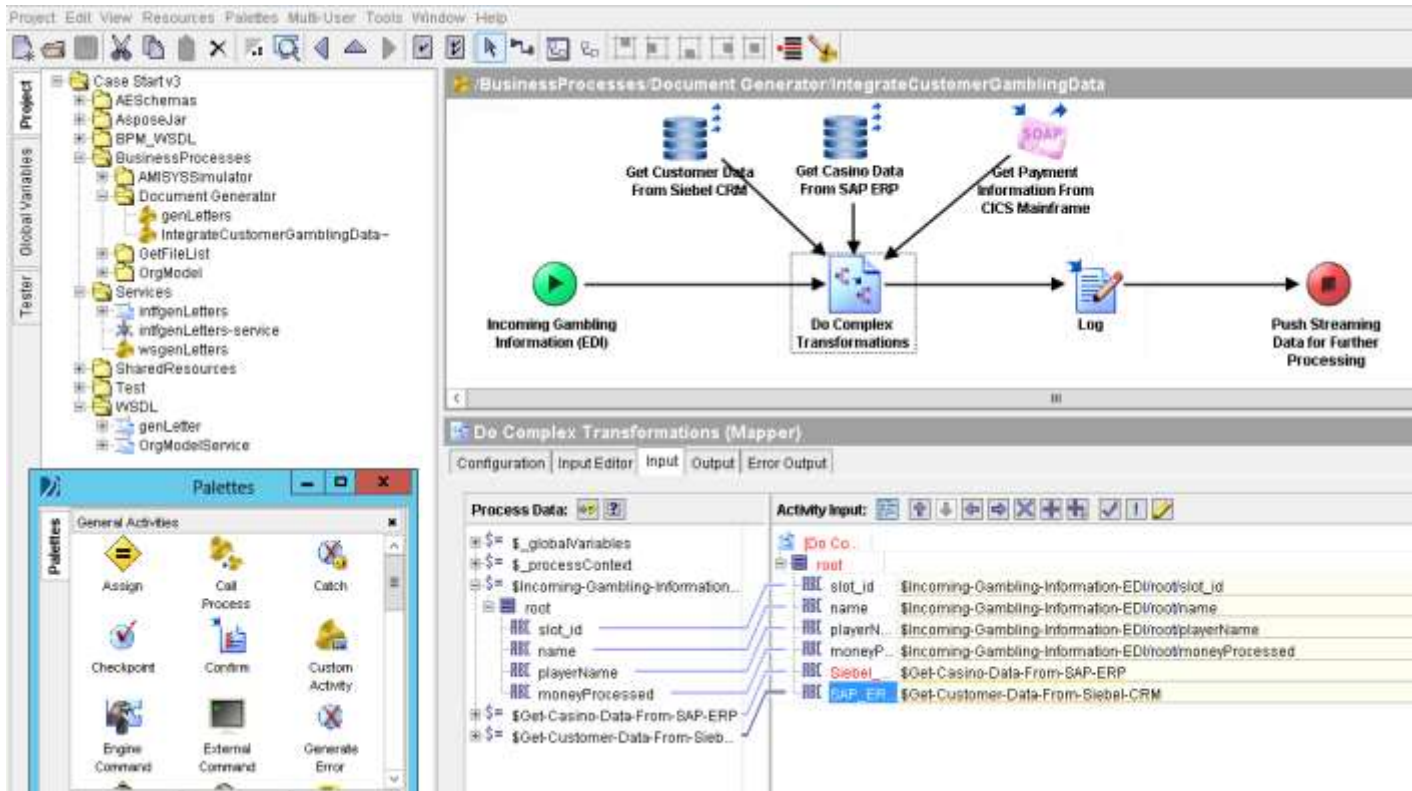- Analyze
- Action

In-Memory Computing:
- Enable Real Time
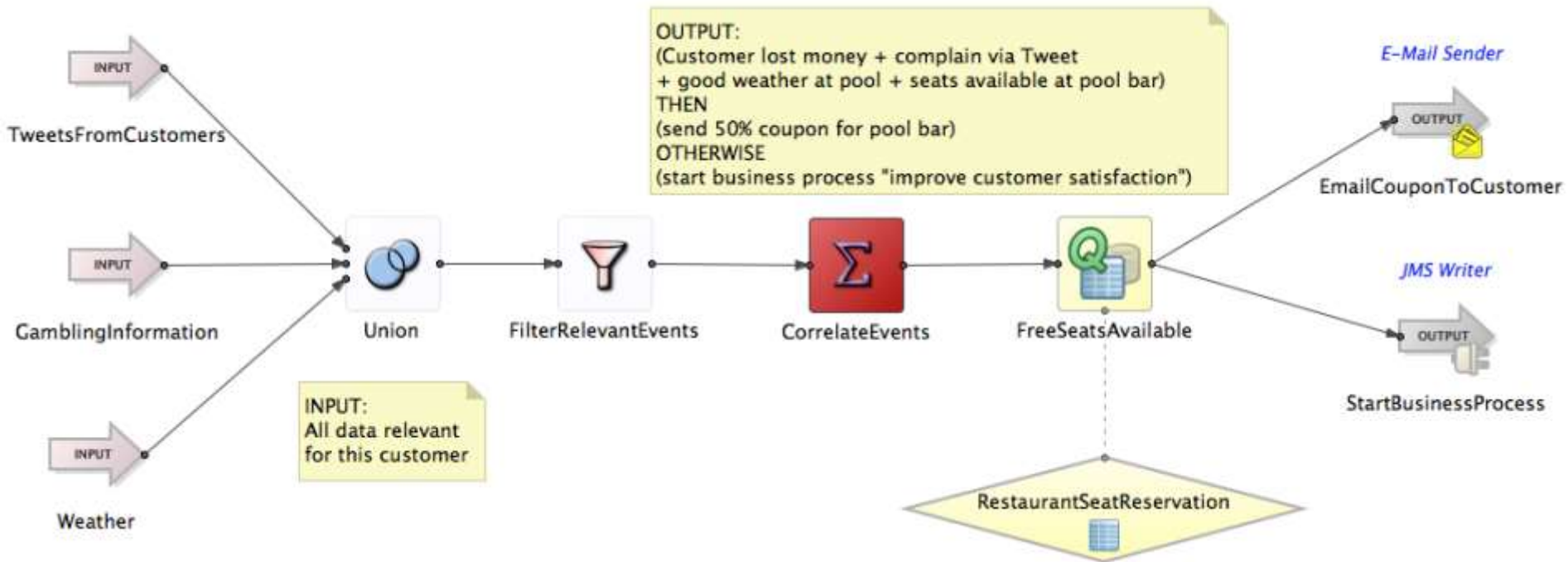- Only customers that have checked in

https://www.youtube.com/watch?v=X-7S3kCOx9k
→ Attention: The following slides do not represent the same implementation as the real world use case at MGM Resorts!

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Suite of Tools

Specific Tools

Frameworks

Complexity of Orchestration

Low

High

e.g.
Camel (Integration)
Hadoop (Big Data)
Activiti (BPM)

e.g.
Mule ESB (Integration)
MapR (Big Data)
Bonita (BPM)

e.g.
TIBCO Suite
(Integration, Big Data,
Analytics, BPM)

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Example: <u>Integration</u> with TIBCO BusinessWorks

1) Integrate customer data from Siebel CRM.
2) Integrate casino data from SAP ERP.
3) Integrate payment information from CICS mainframe
4) Process incoming gambling information from slot machines via EDI.
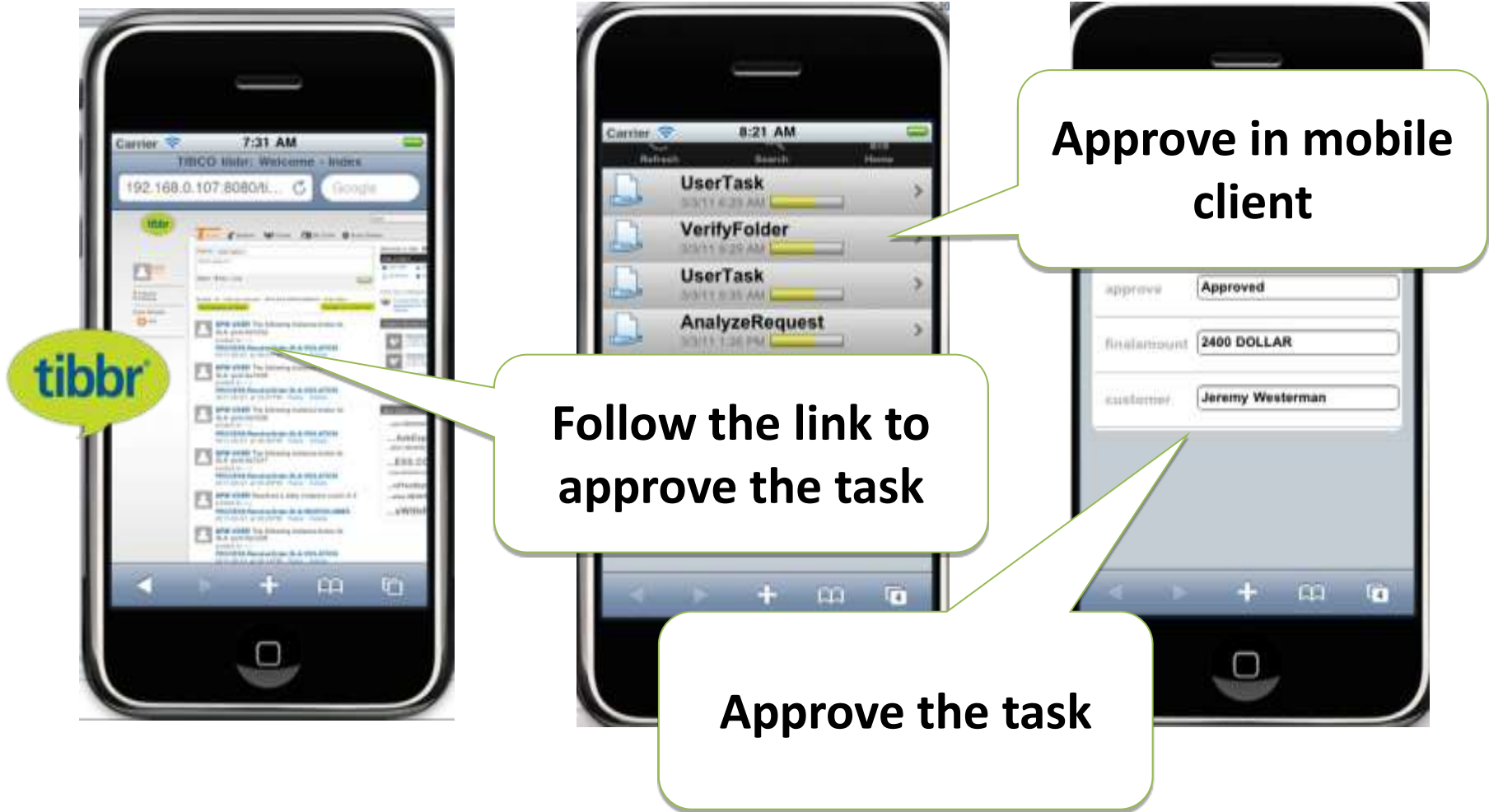5) Push streaming events in real time to output connector.

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OUTPUT:
(Customer lost money + complain via Tweet
+ good weather at pool + seats available at pool bar)
THEN
(send 50% coupon for pool bar)
OTHERWISE
(start business process "improve customer satisfaction")

INPUT:
All data relevant
for this customer

TweetsFromCustomers

GamblingInformation

Weather

Union

FilterRelevantEvents

CorrelateEvents

FreeSeatsAvailable

RestaurantSeatReservation

E-Mail Sender

EmailCouponToCustomer

JMS Writer

StartBusinessProcess

1) Filter and analyze all kinds of events.
2) Correlate relevant events.
3) If possible, react in real time automatically.
4) Otherwise, start a business process.
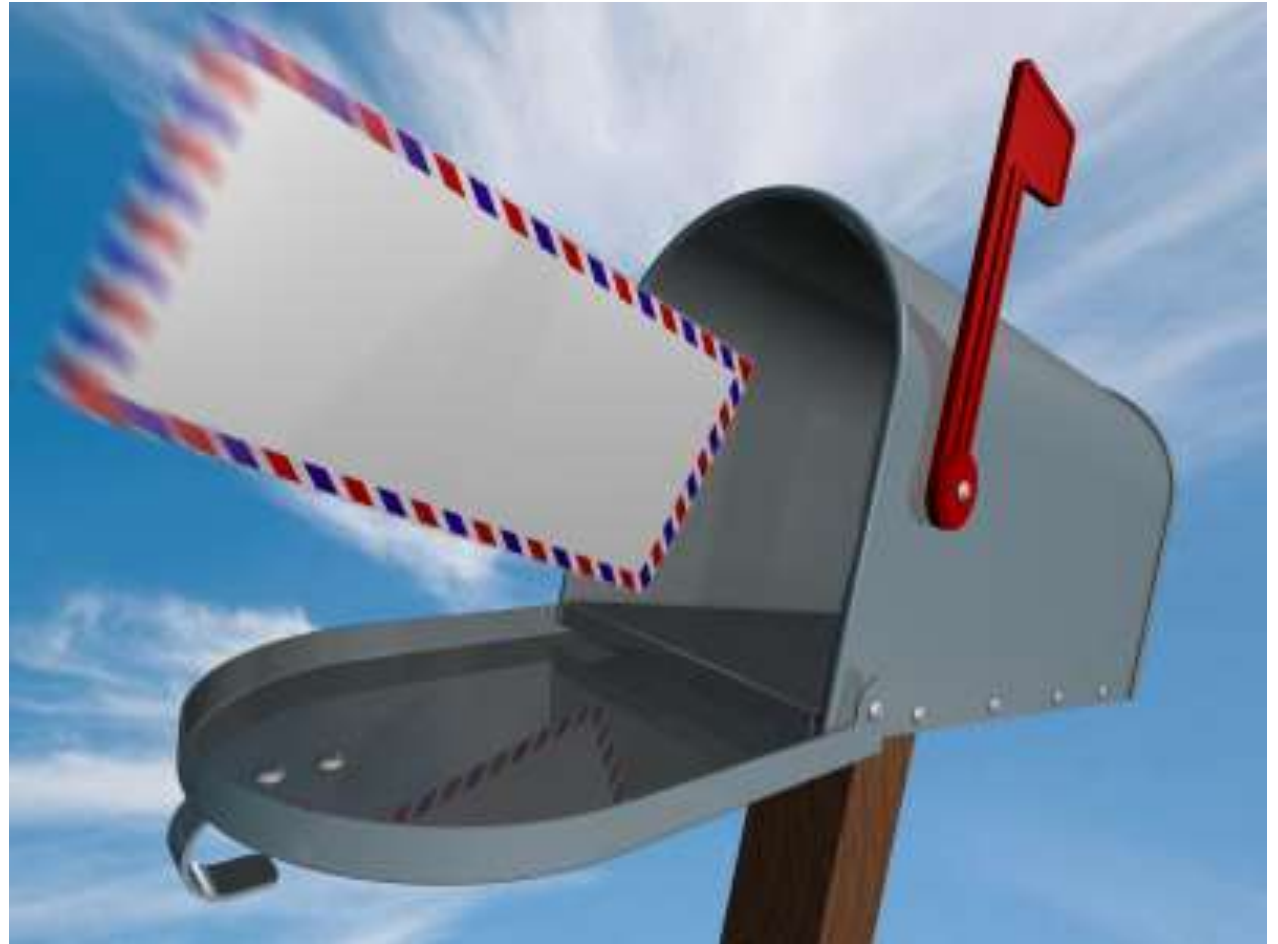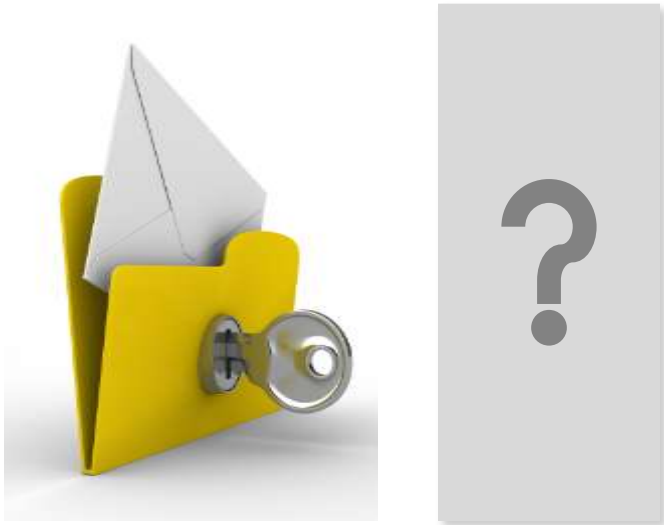
Example: Business Process with TIBCO AMX BPM
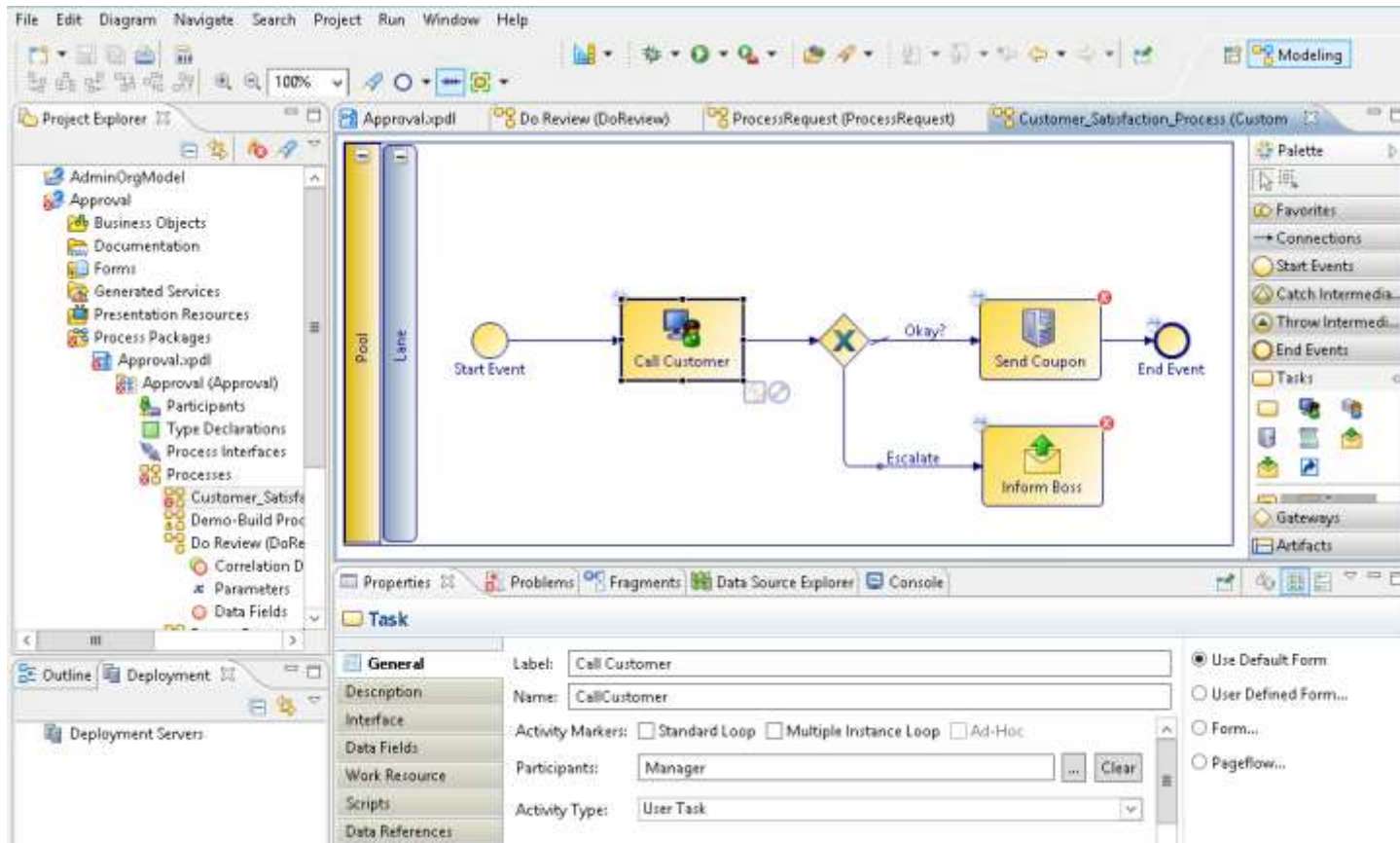
1) Contact customer via phone.
2) Do something to make customer happy again, e.g. send a gambling coupon.
3) Or escalate to your boss if customer does not appreciate the offer.

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Approve in mobile client

Follow the link to approve the task

Approve the task

Process Notifications: Work Distribution to Occasional Users

Intelligent Business Processes use Big Data / Fast Data Analytics! ✅

Integration and Separation of Concerns are inevitable! ✅

Social Integration becomes prevalent for supporting occasional users! ✅

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Questions?

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