RED HAT FORUM 2018 ZURICH

redhat.

ENTERPRISE INTEGRATION IN DER CLOUD
DIE ZUKUNFT

DIETER WIJNGAARDS | CTO **ADESSO**

DOMINIK WOTRUBA | CTO **RED HAT**

adesso

THE WORLD IS CHANGING FAST

THE NUMBERS TELL THE STORY (AND IT'S NOT OVER YET)

90% of all data was created in the last 2 years [1]	**77%** of Americans own a smartphone [2]	**85%** of customers making a major purchase start online [3]	**41%** of enterprise workloads are running on cloud [4]	**29B** devices connected to the internet by 2022 [5]	**$284B** in mobile commerce in the US by 2020. [6]
BIG DATA	MOBILE	SOCIAL	CLOUD	IoT	API ECONOMY

[1] IBM, *10 Key Marketing Trends for 2017*, Dec 2016. [2] Pew Research Center, *Mobile Fact Sheet*, Jan 2017. [3] Synchrony Financial, *2016 Major Purchase Study*, Dec 2016.
[4] 451 Research, *Voice of the Enterprise: Cloud Transformation*, September 2016. [5] Ericcson, *Ericcson Mobility Report*, Nov 2016.
[6] Business Insider, *The Rise of M-Commerce: Mobile Shopping Stats & Trends*, Dec 2016.

DIGITAL TRANSFORMATION IS INTEGRATION

SUSTAINED COMPETITIVE ADVANTAGE

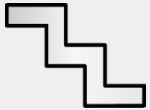
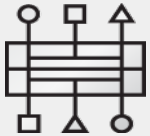
*"Only a small percentage of companies will gain competitive advantage from **SMACIT [social, mobile, analytics, cloud, and Internet of things] technologies.** Those that do will **focus less on the individual technologies and more on how they rally all those technologies, in unison, to fulfill a distinctive purpose."***

HARVARD BUSINESS REVIEW
Jan 2015

Source: Jeanne W. Ross, Cynthia M. Beath, & Ina Sebastian for HBR, https://hbr.org/2015/01/why-nordstroms-digital-strategy-works-and-yours-probably-doesnt Jan 2015.

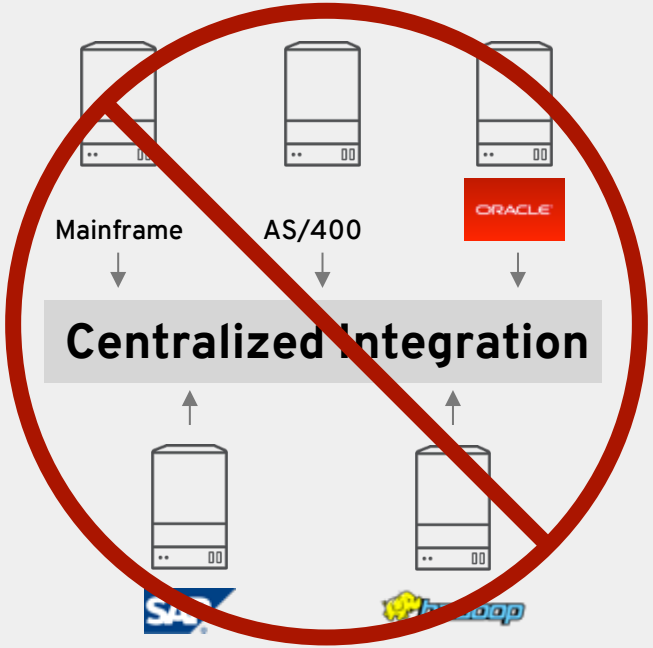
AGILE TEAMS CANNOT GET INTEGRATION FROM LAST GENERATION PRODUCTS

Enterprise IT is undergoing fundamental change. To remain competitive, businesses need an integration platform capable of supporting current ***and*** next generation architectures.

Service Endpoints	Architecture	Development Process	Deployment	Infrastructure
				
Webservices	Monolith	Waterfall	Server/VM	Data Center
↓	↓	↓	↓	↓
				
APIs	Microservices	CI/CD	Container	Cloud

adesso redhat.

INTEGRATION IS UNDERGOING RAPID CHANGE



Previous generations of Integration

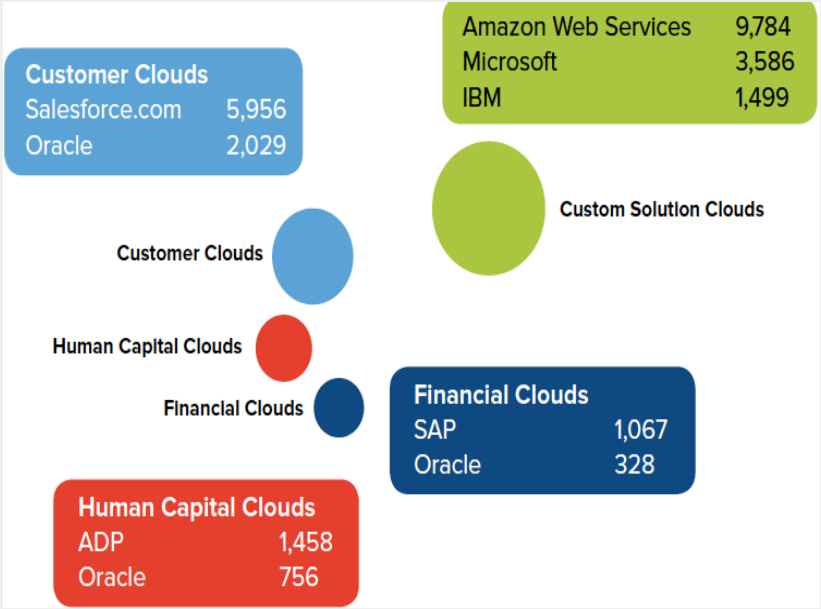
- Centralize integration
- Centralize expertise
- Use proprietary connectors
- Solve the N^(N-1) complexity

Distribution, Containerization and APIs are changing everything

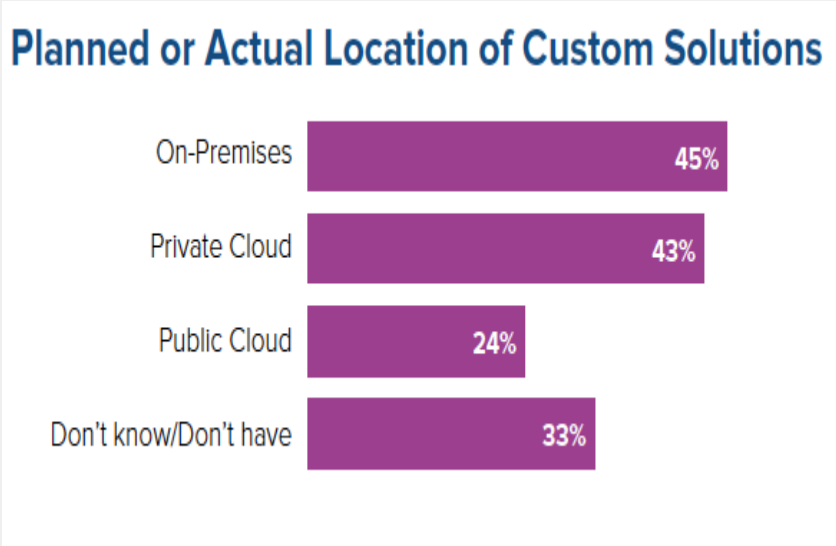
- Hundreds of apps become thousands of services
- Integration can take place anywhere in the organization
- Bottlenecks can be removed
- Integration connects front of house and back office systems

adesso redhat.

NEED TO INTEGRATE APPS WHERE DEPLOYED



There isn't <u>one dominant</u> cloud

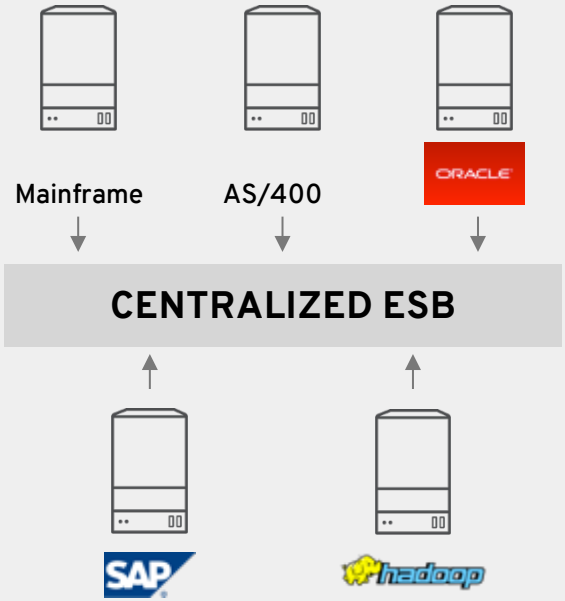


45% run bespoke applications in a private cloud or are implementing within 12 months

Source: IDC InfoBrief Agile Integration for Today's cloud-enabled enterprise, https://engage.redhat.com/agile-integration-cloud-s-201711061616 Oct 2017.

adesso redhat.

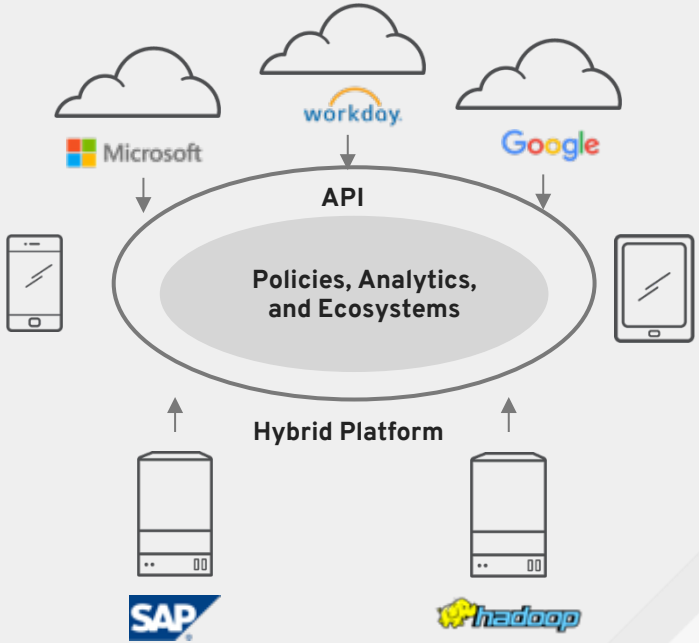
WHAT'S NEEDED? API-CENTRIC INTEGRATION.



Centralized Hub

Decentralized

More Agility



API based

adesso | redhat.

HOW INTEGRATION IS DELIVERED ALSO NEEDS TO CHANGE

RESHAPING THE INTEGRATION DELIVERY MODEL: ENABLE DIY TEAMS

Centralized Integration Delivery (Efficiency)

Do-it-yourself or Agile Teams (Agility)

adesso redhat.

CHALLENGES AT SUISA

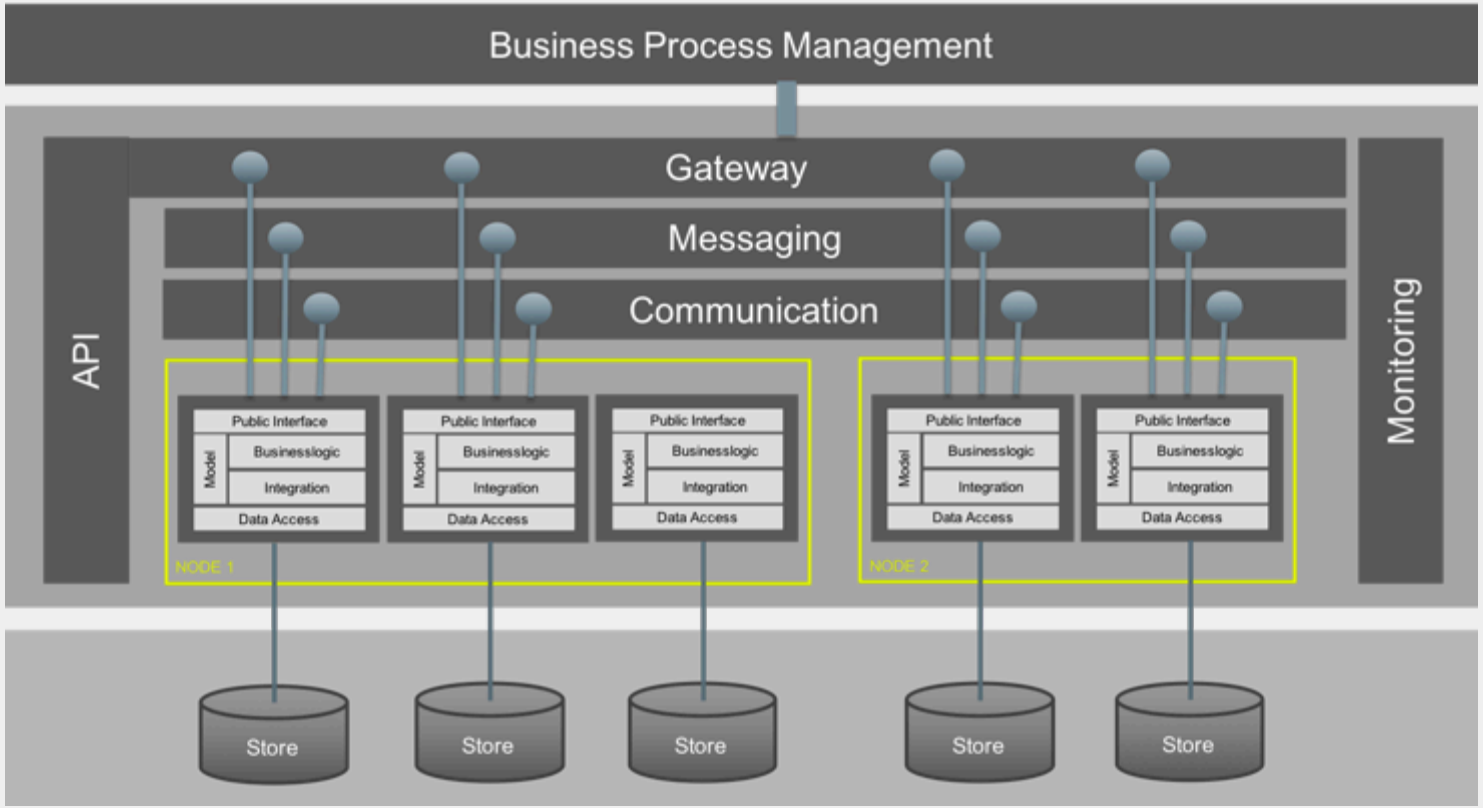
DIGITAL DISRUPTION IN THE MUSIC BUSINESS

- «Online» sales channels are becoming more important
- Internationalisation of processing usages
- More data over numerous channels

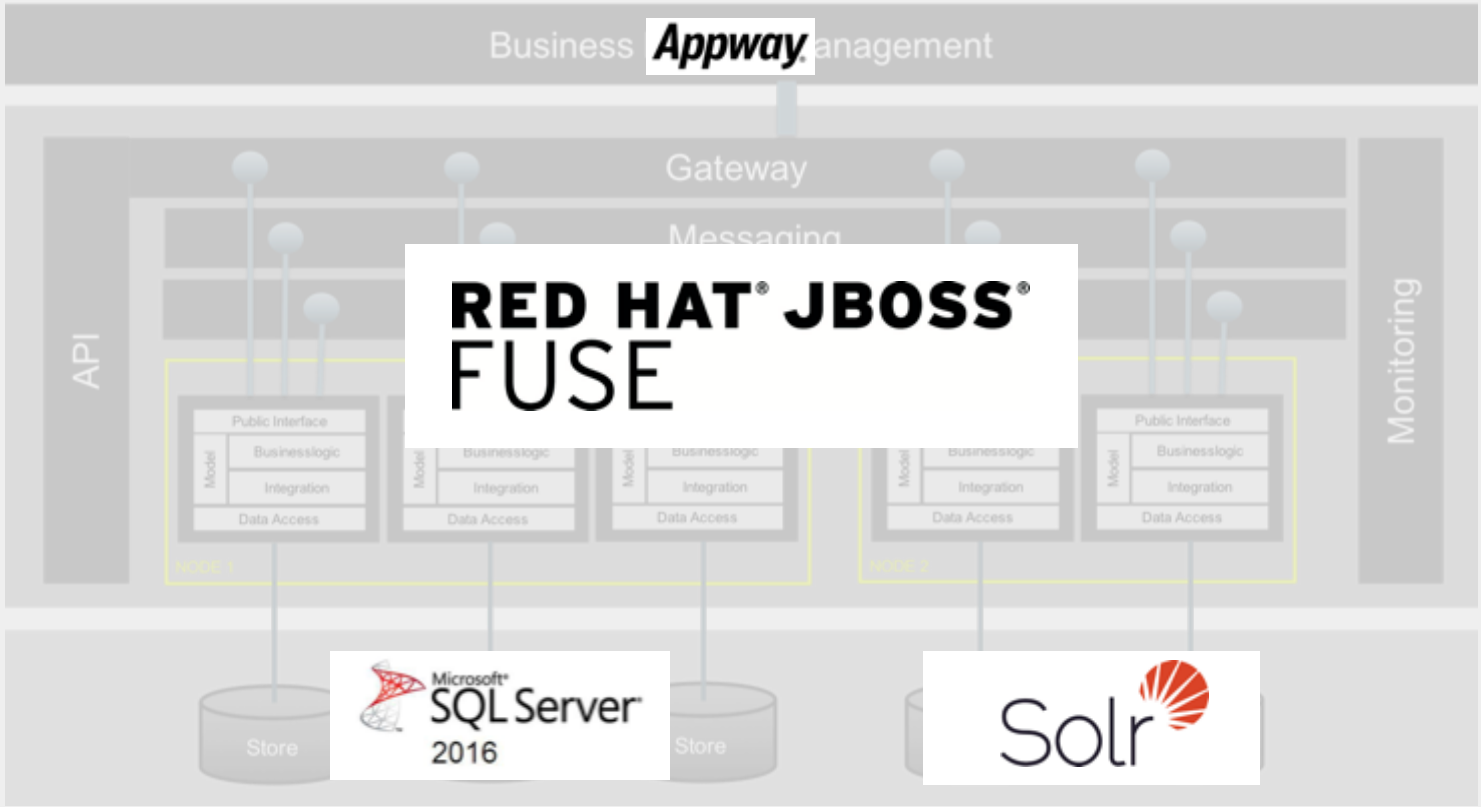
DIGITALISATION OF THE WORKFLOWS AT SUISA

- Reducing costs and processing times: From paper to Papierverarbeitung to optimal workflows
- Integration of interfaces to systems of other societies
- New interfaces to new business partner
- Severe increase of data volumes demands scalability

MODULAR INTERGRATION ARCHITECTURE AT SUISA



INTEGRATION WITH MICROSERVICES



INTEGRATION WITH MICRO SERVICES

WITH JBOSS FUSE A MODULAR SERVICE ORIENTED APPROACH IS FEASIBLE

- Lightweight integration with Apache Camel
- Explicit modular service design with Apache Karaf (using OSGi services)
- Implicit modular service design with Spring boot or EAP (Red Hat Fuse 7)

CAN BE MOVED TO THE CLOUD

- Simple patterns are provided to deploy and maintain the integration services

FOR SUISA THE INTEGRATION ARCHITECTURE IS THE KEY FOR SUCCESS

DEMO CAMEL AT SUISA
WORK SERVICE

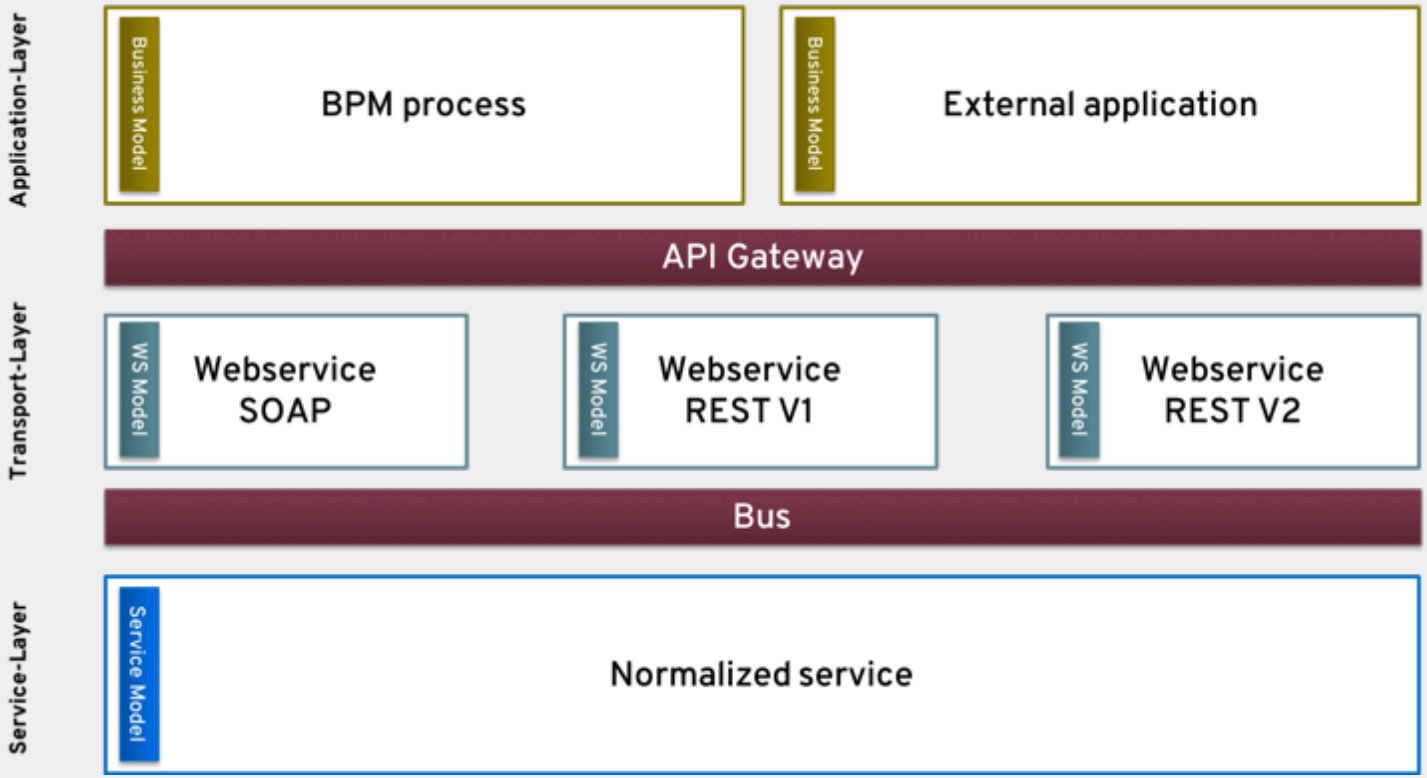
CI/CD WITH BPM CAN BE COMPLICATED

LIFECYCLE OF A BPM PROCESS IN CI/CD ENVIRONMENTS IS DIFFICULT TO CONTROL

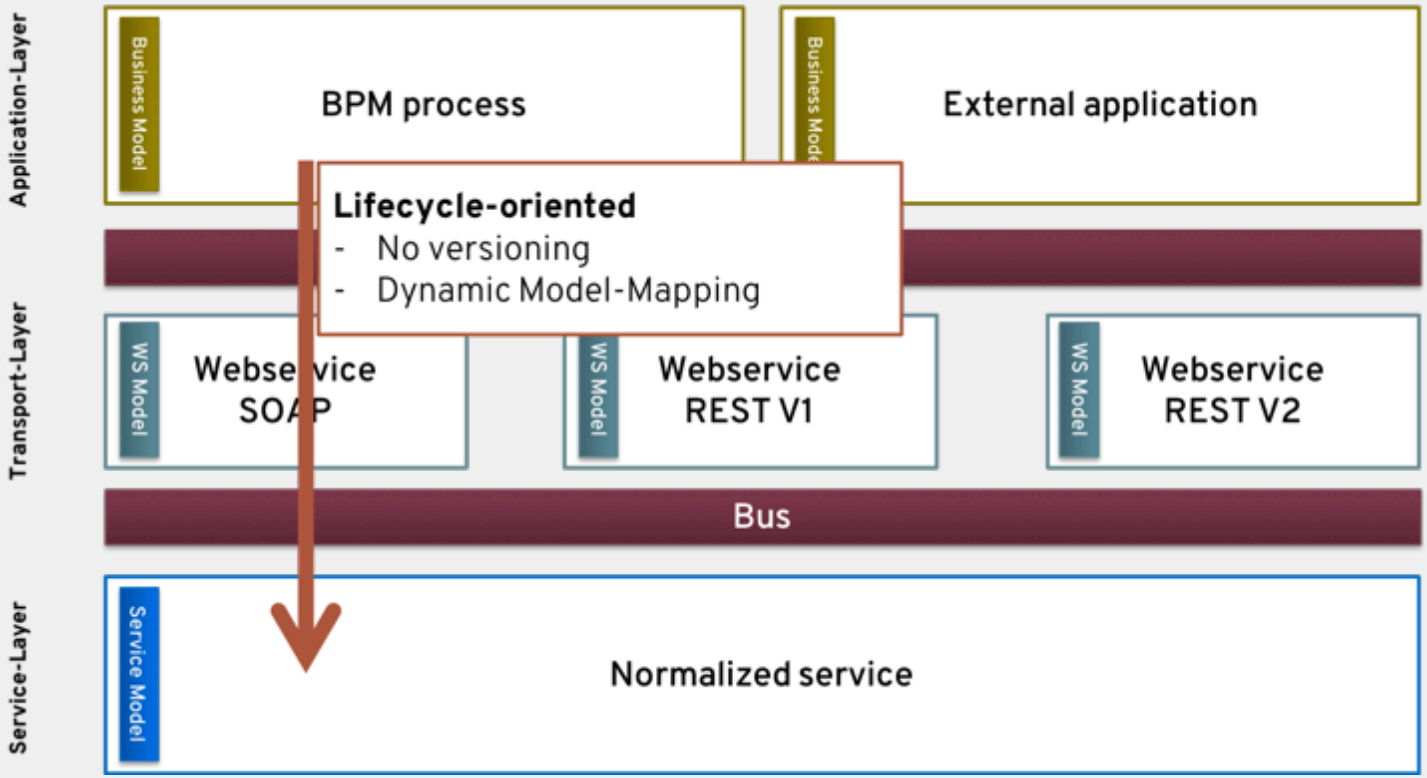
- BPM Processes are not stateless and cannot be changed without migration
- Migrating BPM processes is error-prone and difficult to test
- Integrating services with different lifecycles can cause unexpected errors

THIS MUST BE ADDESSED IN YOUR ARCHITECTURE DESIGN

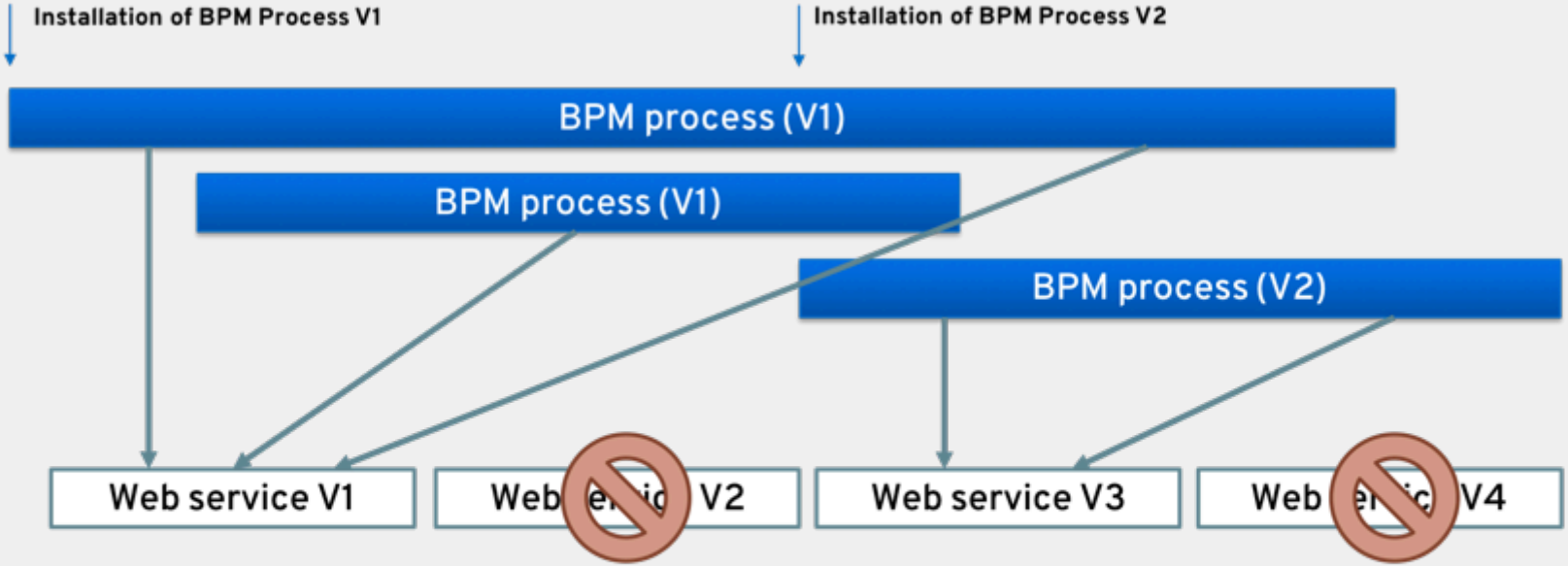
MASTERING THE BPM LIFECYCLE AT SUISA



MASTERING THE BPM LIFECYCLE AT SUISA



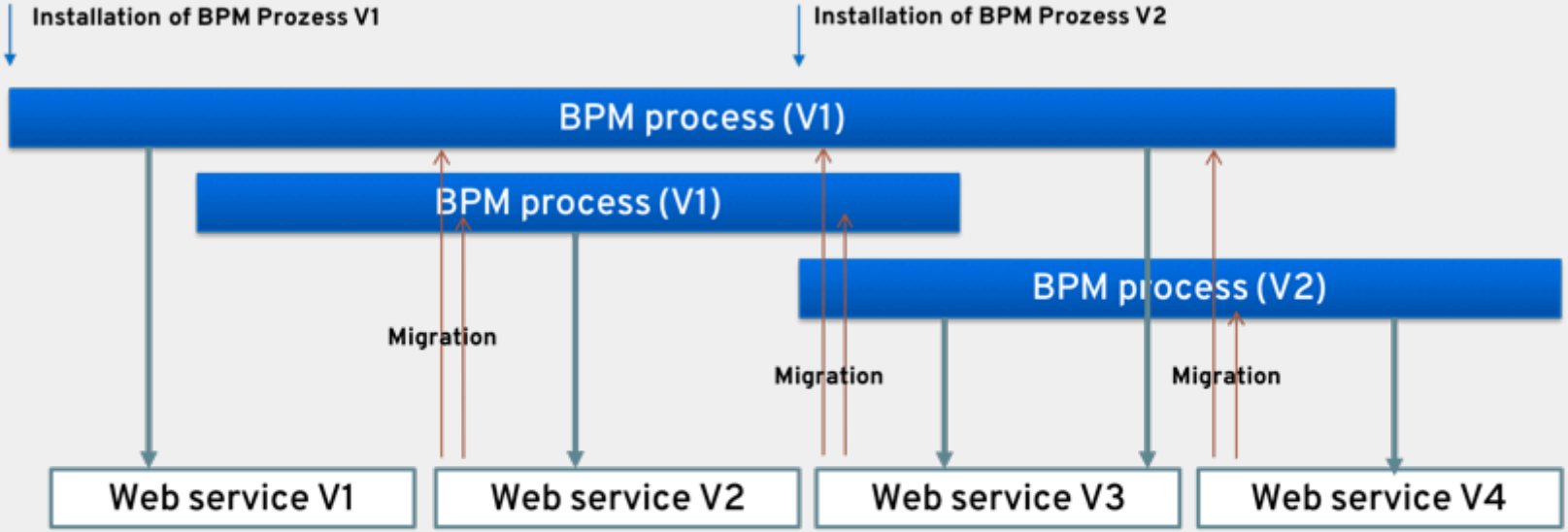
MASTERING THE BPM LIFECYCLE AT SUISA



Solution: No process migration / Migration of web services

- Service-management is complicated, as the actual usage of a web service in a specific version is tentative

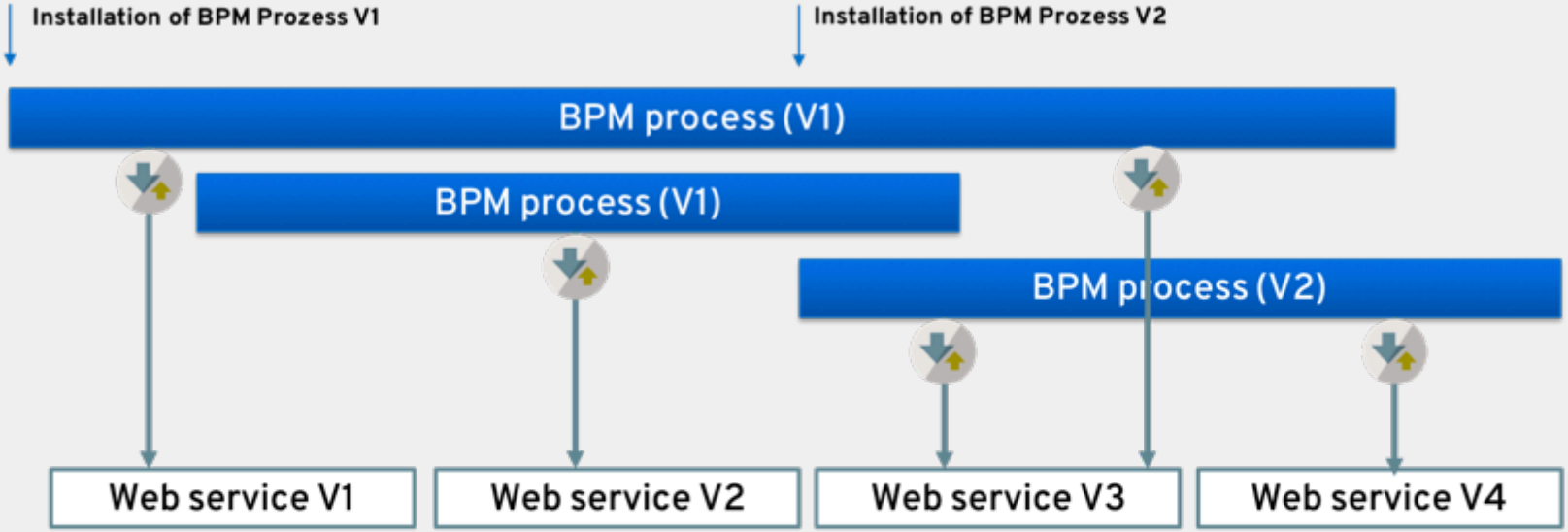
MASTERING THE BPM LIFECYCLE AT SUISA



Solution: Process migration for every new version of the BPM process

- Service-management is simple
- Process migrations for many process instances is complicated and error-prone

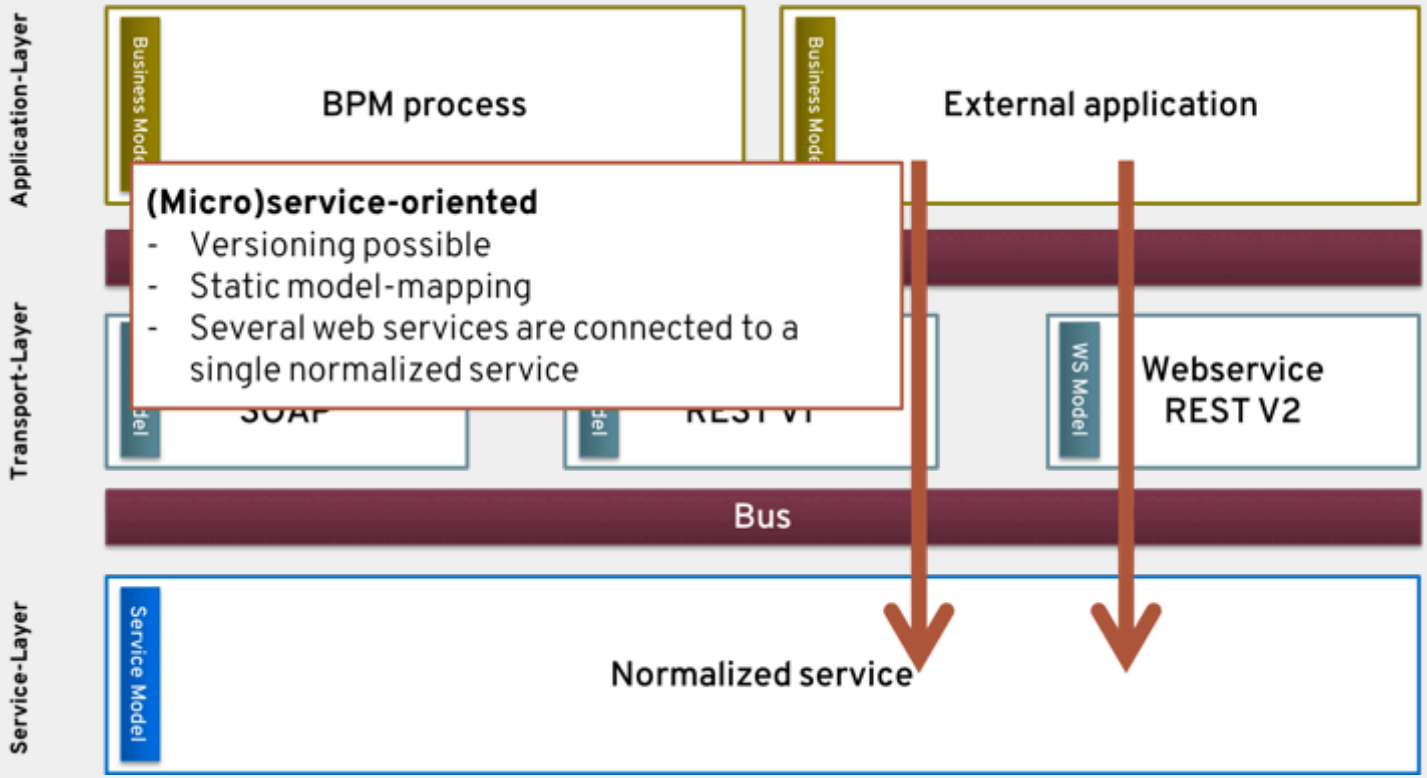
MASTERING THE BPM LIFECYCLE AT SUISA



Solution: Dynamic model-mapping for every new version of a web service

- Service-management is simple
- Normally, no process migrations are necessary, but are still possible
- Large and complicated BPM model changes can be difficult; coordination is needed

MASTERING THE BPM LIFECYCLE AT SUISA



WHY MIGRATE FROM RED HAT FUSE 6 TO FUSE 7 AND THE CLOUD?

SUISA

SCALE UP DEPENDING ON SERVICE USAGE ON A DOMAIN BASIS

- With a cloud/OpenShift approach service domains can be deployed and scaled more easily as supported by the SUISA modular integration architecture

HYBRID CLOUD IMPROVES THE AVAILABILTY OF SERVICES

- New partner services can be deployed in the cloud with better SLAs

FASTER DEPLOYMENT IMPROVES DEVELOPMENT CYCLES

- The BPM system (Appway) follows a collaborative development process that makes deploying service domains very tricky
- A cloud/OpenShift approach simplifies the deployment of new service domains

INTEGRATING WITH RED HAT FUSE 7

Red Hat Fuse 7.0

NEW

Fuse Online
«Integrationsplatform as a service based on Fuse-technology»

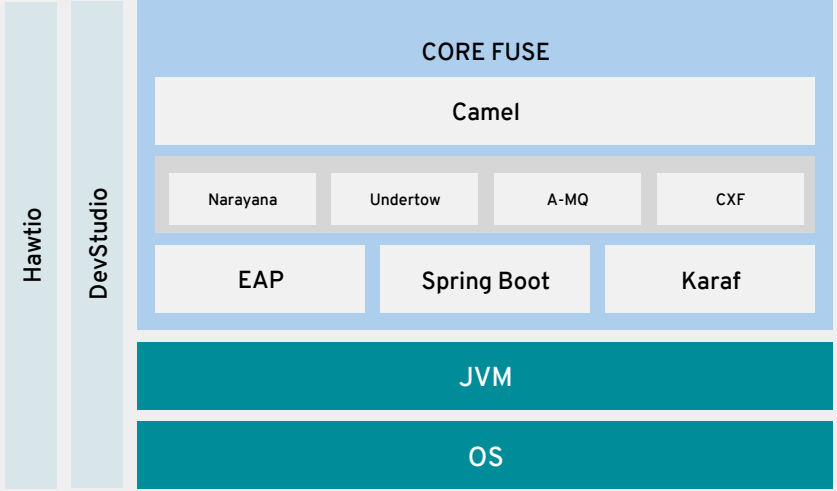
Fuse Standalone
«Classic local installation»

NEW

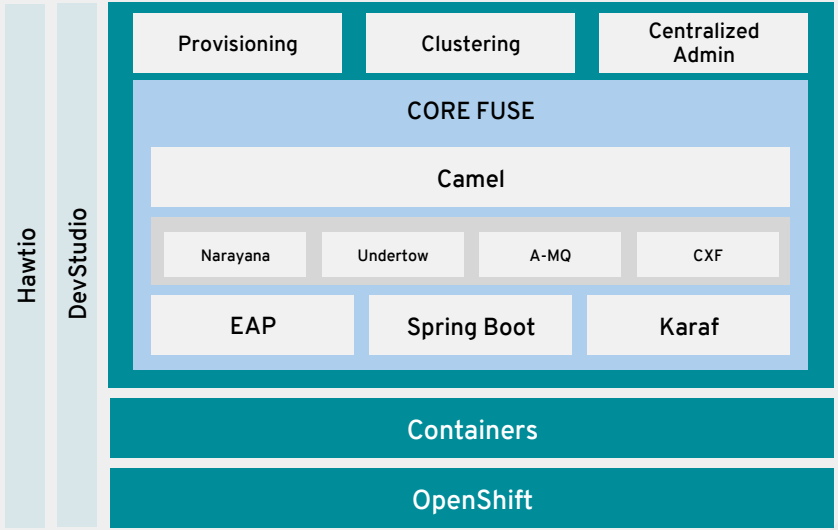
Fuse on OpenShift
«Fuse in a container managed by OpenShift»

RED HAT FUSE 7 TECHNOLOGY STACK

Red Hat Fuse Standalone

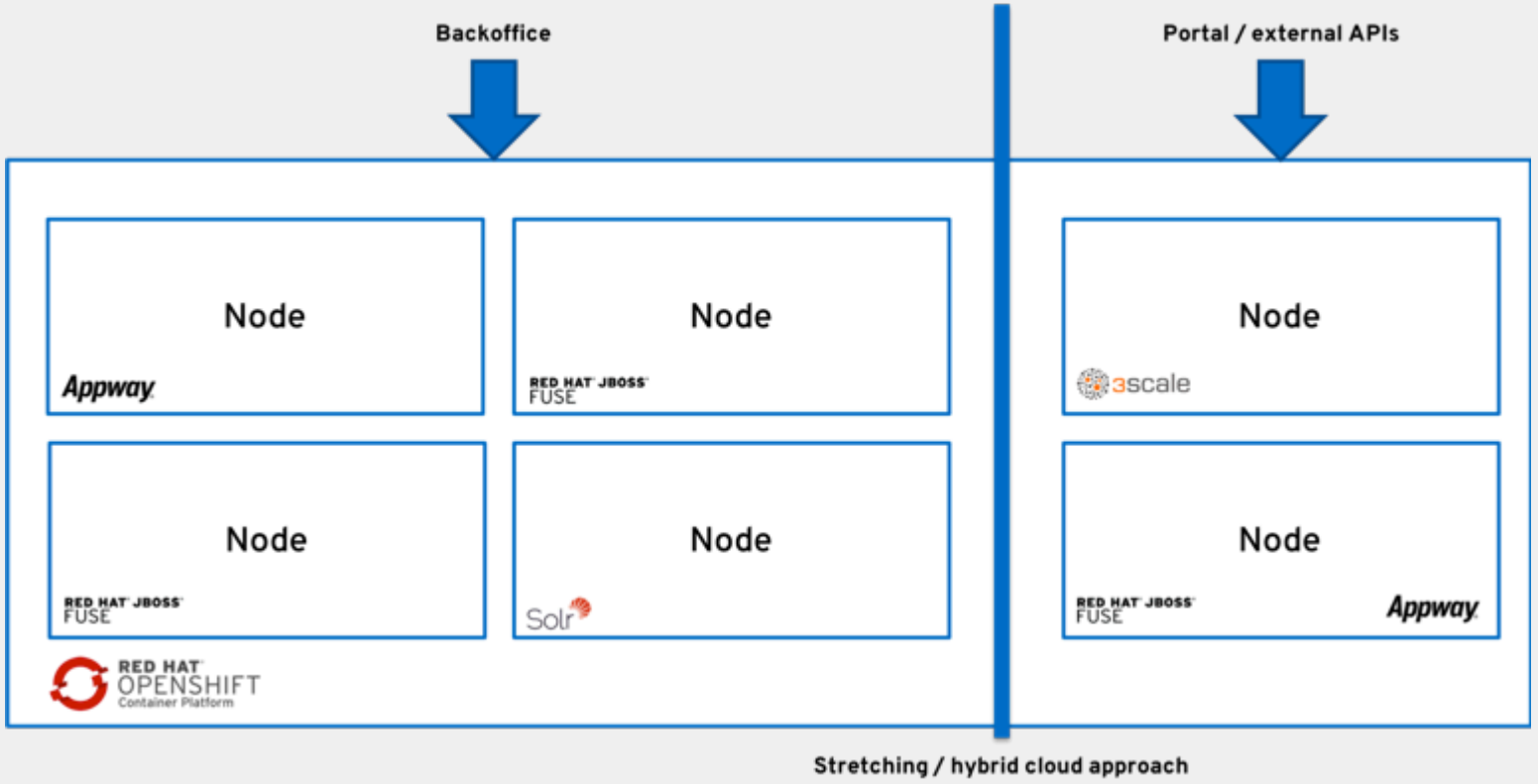


Red Hat Fuse on OpenShift



DEMO FUSE 7 IN THE CLOUD WORK SERVICE

POSSIBLE HYBRID CLOUD APPROACH AT SUISA



BRINGING INTEGRATION TO THE CLOUD: CONCLUSION

THE ARCHITECTURE IS THE KEY FOR SUCCESS

- An integration architecture based on a modular service approach can be moved to the cloud very easily
- Explicit modularisation of services makes scale-up and -out scenarios easy to implement