# Digital Integration Hubs Power Transformation on IBM Z

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# **Digital Shift in Financial Services Underway**

#### **Competitive Pressures**

- Non-traditional FIs
- Customer experience
  expectations
- Digital Interaction & Social media driven complaints

#### **Regulatory Pressures**

- Increasing regulations
- Changes in regulations
- Personnel shortages
- Non-common data standards



#### **Profitability Pressures**

- More inspection of marketing budgets
- Limited insights across entire organization (cross product, cross region...)

#### **Business Operations Risk**

- Transformation Disruption
- Agility to implement new business models
- Flexibility to leverage new technologies
- Skills

#### How best to accelerate the digital shift profitably and securely?

#### Pre-Digital Transformation vs. Post



## **Digital Transformation Implications**





#### **Open architecture principles**

reinvent core systems with a tuny secure and nignly resilient modern technology platform for plug-and-play capabilities.

#### Hyper Modular architecture

Self-contained, micro-services principle, but still able to meet non-functional requirements of performance, availability, etc.

# Industry aligned reference architectures

guide the decomposition of business functions, ensuring hyper modularity.

#### TARGET STATE REQUIREMENTS

# Transform & avoid negative disruption

by ensuring operations continue to meet required levels of performance, security and availability across core systems

#### Modularize core effectively

while preserving transactional consistency and coherency where needed, adding agility via microservices interfaces and hybrid cloud

#### Accelerate integration

Enable agile and simplified information flow between core systems & hybrid cloud

# **Need for Flexible Information Flow**



# Z Digital Integration Hub with Systems of Record

Create a flexible, efficient information flow between multiple existing systems of record and cloud environments

- Provide information flow not raw data access between Systems of Record (SoR) and cloud environments with scale, high throughput and low latency requirements while also minimizing impact to transactional systems
- Reduce complexity of joining, aggregating, and computing information from multiple SoRs
- Abstract & decouple SoR transactional data formats & data store specifics from consuming applications allowing for greater flexibility
- Mitigate unpredictable workload characteristics from expanding digital channel services
- Leverage event mediation & aggregation for increased efficiency of cloud applications' interaction with SoR

#### **Digital Integration Hub Architecture**



Faster ROI for Cloud Transformation Initiatives Better agility to expand ecosystems & create new channels Leverage high-value investments

# **Z Digital Integration Hub Technical Details**



- Multiple Context specific inmemory instances of information relevant for use throughout the enterprise (not raw data)
- Modern, prevalent interfaces usable across hybrid environments
- Technology driven via in-memory db (GridGain for z/OS) combined with data virtualization / abstraction
- Incremental, Non-disruptive approach to introducing new products, features and extending to hybrid cloud ecosystems
- □ Can customize offering with industry specific content, for example compliance /risk
- Integrate cloud capabilities quickly

- Transaction and related data incumbency with systems of record efficient and performant integration
- Leverage & build upon client investments in mission critical core applications to deliver business value
- Persistence of in-memory instances to Db2 z/OS, unparalleled DR via integration with GDPS for cross-site replication

## Z Digital Integration Hubs for Providing Wholistic View of Customer

# Today's Landscape

- Manual processes link client assets across enterprise
- Lack real-time view of position, risk, growth

# Why?

- Fragmented systems, data
- Siloed applications
- Latency & loss of granularity

# **Potential benefits**

- Customer acquisition, retention
- Multiple, integrated views of customer
  - Account view
  - Family view
  - Portfolio view
- Cross & Up-sell opportunities

# Cross Organizational View of Client



## Z Digital Integration Hub to Accelerate RegTech / FinTech Ecosystem Partnerships

- Number of regulations ٠
- Changes in regulations ٠
- Personnel shortages ۲
- Non-common data standards ۲

Increasing costs for Banks



#### Sharing costs of compliance, responding to increasing granularity of regulations, reducing risk through limiting raw data exposure

#### FinTech / RegTech:

- Identify most current ٠ regulations, changes, pending changes, etc.
- Provide pre-filing • validation specific to the FI using new technologies

#### Z Digital Integration Hub to Share Core Systems Information



- The payment decisioning application leverages various data for decisioning, including data from multiple core systems of record (SoR)
- Data transferred periodically and in formats specific to SoR applications
- As a result, payment decisioning application may not have current information (e.g. on account balances) and requires application dependencies on data formats
- This can lead to increased compliance risk & reduced agility for change.
- The Z Digital Integration Hub continually consumes transactions from core & blends overnight batch
- Only selected, relevant information is computed, results streamed via Kafka
- Payment decisioning application has continual, current account balances and other relevant account information to use during decisioning
- Results: reduced risk window due to current information & decoupled dependency from specific data delivering more agility

**Today State** 

# Z Digital Integration Hub as Part of Progressive Modernization



#### Today's Landscape

- Many enterprise clients are modernizing core, but doing so progressively to mitigate risks
- A number of core applications have not been modified in 20 years or more, leading to complex and long modernization journeys

## Parallel Paths to Modernization

- Modularize core applications, introduce APIs for interaction and re-write as possible
- Modernize DevOps processes and tool chains
- Introduce agile and simplified information flow between core systems & hybrid cloud

### **Potential Benefits**

- Facilitates the co-existence & interchange between components deployed in hybrid cloud and existing applications
- Does not first require application or data restructure, leading to faster ROI

# **Additional Client Use Cases**

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- Enable aggregated, select blending of batch processing results with intra-day core transaction processing, identifying a small subset of results to flow to applications residing in hybrid cloud (e.g. risk applications, marketing/sales, product servicing, etc.)
  - Value: Integration of blended real-time information from z/OS Systems of Record with cloud applications both on-prem and in the public cloud
  - Satisfy channel application needs for specific information ("data" at the edge) with more agility, reduced raw data exposure & flexibility of deployment for wide array of application components
    - Value: Increase rate and pace of channel application deployments in the cloud, abstract these applications from the details of System of Record raw-data context, and do not overwhelm core transactional systems with unpredictable information requests
  - Pre-populate computed / aggregated Systems of Record information for flexible use by ecosystem partners with separate auditing and governance based on use case, partner, etc.
    - Value: Enable fast, agile interaction with ecosystem partners in areas of omni-channel, compliance, product pricing, etc. while preserving security, performance and availability of core systems



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# Why Z Digital Integration Hub on z/OS

Cost Advantages	Currency of Information	Data Security & Governance
Cost advantages delivered via: highly zIIP- eligible technology components, flexibility to drive information flow APIs or transactional APIs as appropriate for use case, and limiting low-value I/bO costs of moving bulk raw data off-platform during operations	Information derived from current and valuable data is tightly integrated with unique z/OS capabilities providing real business value and better customer experience	Security starts with identifying what information needs to be shared: compute, aggregate, join data on highly secure platform, leveraging its existing auditing and governance, rather than exposing all raw data
Scalability	Unparalleled Disaster Recovery	Integration with Core
Scalability and Performance are delivered via: transaction and data incumbency on z/OS, event aggregation at the source, and memory to memory techniques between data sources and digital integration hub	Persistence of in-memory digital integration hub instances to Db2 z/OS provides unparalleled Disaster Recovery via integration with GDPS for cross-site replication	Flexibility to additionally leverage information in digital integration hub from existing core operations on z/OS leveraging highly optimized interfaces

# Tightly integrate digital integration hub with core systems of record for efficient, flexible, and©2019 IBM Corporation16 June 2020Secure digital transformation