Technology investment and relative bank performance

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Synopsis

Why is change-the-bank tech spend critical?

What is the right level?

Which banks can afford it?

Use Cases for Treasury, Finance & Risk
Tech challenge – US

Post GFC – Non banks dominate US mortgage lending

But regulations on non-banks tightening (living will, stress test)

Largest non-bank mortgage lenders in the US
Originations, 2018 ($bn)

*Rolling 12-months
Source: Urban Institute
© FT
Tech challenge - UK

Digital banks reality bites after huge initial surge

Regulatory scrutiny increases as challengers grow..

Monzo – 1.6m UK customers (3x); deposits £462m (6x); loss £47m; valuation > £2.0bn
Next - US

Revolut – 2m UK customers, 2.7m EUR customers; loss £15m; valuation £1.7bn
Next – US, AUS, SG, JP, CAN

Starling 0.6m UK customers
Next – IRL, FRA, GER
Tech challenge – HK

Hong Kong Heavyweight Clash - UK GSIB’s vs China Big Tech

HKMA grants digital banking licenses Tencent, Alibaba, Ping An and Xiaomi

- HK banking operations generate 58% and 42% of total group PBT for HSBC and SCB respectively.
- Incumbents experienced in operating under strict bank regulations
- Challengers have speed and power without legacy issues
Tech challenge - SG

MAS phased approach carefully manages potential disruption

Singapore to issue up to 5 digital banking licenses

- Only 2 full bank and 3 wholesale bank licenses
- Initial limits on amount of deposits, complexity of product offering and customer base
- Only 2 geographic jurisdictions, initially
- Minimum S$15m initial capital, rising progressively
GSIB Relative Performance

Measures

• **ROE** – Return on Equity
• **ROTE** – Return on Tangible Equity
• **CET1** – Core Equity Tier 1 (Capital Adequacy Ratio)
• **SLR** – Supplementary Leverage Ratio
• **TPR** – Total Payout Ratio

GSIB* Legend

Sources:
Company externally published results and investor presentations
*Globally Systemically Important Banks
Capital Adequacy

2018 CET1 vs med term CET1 target

GSIB end point targets finally met
Leverage

2018 SLR vs med term SLR target

EUR GSIB’s most vulnerable in stress
Returns

2018 ROE vs med term ROE target

2018 ROTE vs med term ROTE target

US GSIB’s well ahead, others struggling
Distributions

2018 TPR vs med term TPR target

US GSIB buy-backs surge
Efficiency

2018 CIR vs med term CIR target

50% of GSIB’s outside safe zone
Hypothesis

• CIR > 75%  business model unsustainable
  – Shareholders starved of returns
  – Insufficient capacity for tech spend

• CIR 65% - 75%  efficiency level unsustainable
  – Competitors better positioned
  – Insufficient capacity for transformational tech spend

• CIR 45% - 65%  sustainable
  – Need to make transformational tech spend “count”

• CIR < 45%  defining strength
JPM has capacity to spend about 10% of annual net revenue on technology

..of which half is expected to go into change-the-bank (new technology or fintech) initiatives

Top performing global banks have considerable flexibility to meet digital threat

JPM 2018 Results
• net revenue $110bn
• net IBT $41bn
• CIR 57%

JPM Tech spend capacity = $110bn * 10% = $11.0bn (approx 10% of net revenue)

JPM New tech & fintech capacity = $11.0bn * 50% = $5.5bn (~$25bn in last 5 years)

Total fintech investments globally in last 5 years $178bn (entire market)
Comparison

DB 2018 Results
• net revenue €16.6bn
• net IBT €1bn
• CIR 95%

Tech capacity = €1bn * 25% = €0.3bn

DB New tech & fintech capacity = €0.3bn * 50% = €0.2bn
(~€0bn in 5 years due to losses)

Competing demands for deployment of capital:
• Business model changes – restructuring (shareholders, customers)
• Discretionary bonuses (staff)
• Distributions – dividends, buy backs (shareholders)
• Transformative tech – (customers, shareholders)
## Digital journey*

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<td>Track org KPI’s Business Intelligence(BI)</td>
<td>Data based decisions Augmented Reality (AR)</td>
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<td><strong>Benefits</strong></td>
<td>Universal use Easy to troubleshoot</td>
<td>Real time Double click Scaleable</td>
<td>Opens new analysis Dynamic</td>
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<td><strong>Drawbacks</strong></td>
<td>Static Inefficient to scale</td>
<td>Modest learning curve</td>
<td>Some data science skills</td>
<td>Requires expert oversight</td>
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*Microsoft
Use case: FX Position Forecasts

**PROCESS CHANGE**
MS Treasury built a machine learning forecasting solution that is addressing a key FX exposure for the company while improving forecasting accuracy of Accounts Receivable and operational efficiency for the team.

**SOLUTION**
Historical data in Azure was cleaned and used to create an automated forecasting solution using the R programming language and Azure ML Studio.

**TECHNOLOGY**
- Cortana Intelligence Suite
- Azure Data Factory
- Azure Machine Learning
- Azure Blob Storage
- Power BI

**RESULTS**
- Cumulative forecasting improved by 6% for last 6 quarters
- Reduced FX impact on other income by ~ 25% in the same period

**TIME**
6 weeks to completion
Use case: Corporate Treasury

Sample of Treasury API’s available to clients through JPM developer portal

- **PAYMENTS**
  - Complete lifecycle - initiation, visibility, reconciliation, reversal

- **REPORTING**
  - Real time - Transactions, balances, JPM entitlements

- **ADMINISTRATION**
  - Simple secure management of JPM entitlements

- **SECURITY SERVICES**
  - Integrate SS data into your systems via Dataport

- **PRICINGDIRECT**
  - Access High quality market based valuations for >1.5m securities

- **TRADING**
  - Access High quality market based valuations for >1.5m securities

Consider merits of API’s for bank Treasury use cases

- Specialist, best in class
- User centricity
- Updated
- Affordable
  - No CAPEX
  - Low OPEX
- Flexible
- Bite sized
- Empowering
Use case: Payment errors & efficiency

JPM’s Interbank Information Network (INN) >220 bank users

Problem: Although STP for payments is 85%-95% it takes days for operations to resolve 5%-15% errors

Solution: Distributed ledger for secure communications between payment parties and retrieve missing information rapidly

HSBC drastically improves efficiency of internal payments

Problem: Internal error rates in line with external. Resolving errors results in balance sheet inefficiency

Solution: Distributed ledger gives greater visibility and certainty on funds across the Group leading to greater balance sheet efficiency
Use Case: Digital compliance

Arival is on track to becoming first US digital bank this year. Aims to serve “abnormal” clients that are too hard for other banks.

Doing compliance differently:
- KYB (business) + KYC (you and friends)
- Ongoing + Onboarding
- Good at all compliance aspects
- Multi jurisdiction focus
- Fully trusted by regulators

Sample of KYB aspects:
- Tracking sign in and login devices and locations
- Sudden use of new devices
- Unexpected country

Sample of ongoing compliance aspects:
- Tracking activity and transactions
- Abnormal activity / deal flagging
- Constant data triangulation
Intelligent Treasury

- Intelligent payments
- Enterprise Resource Planning
- AI cash forecasting
- Automatic treasury compliance
- Smart Hedging
- Robo Shared Service Centre

INTELLIGENT TREASURY
Why is change-the-bank tech spend critical?

Customer relevance & retention  
Efficiency
What is the right level?

Change the bank tech spend

5% of net revenue

But could be constrained if
12.5% of IBT is much lower

(normalized over last 5 years)

Resource Allocation Ladder

- Transformative tech
- Business model changes
- Distributions
- Discretionary bonuses
Which banks can afford it?

Banks making sufficient returns

2018 ROTE vs med term ROTE target

In the efficiency “safe” zone

2018 CIR vs med term CIR target
Thank you

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