



Digital Redefinition of Commercial Banking

February 2019

Digital Natives: Banks are employing Data Analysts/Scientists, AI/ML Engineers and RPA developers to automate and develop new analytical tools and applications

JOB ROLES → AREAS OF APPLICATION ↓	Data/Big Data Analyst	ML Engineer	Platforms/API Developer	RPA Developer	NLP Engineer	Data Engineer/ Architect	Cloud Developer	Applications Developer
Trade Finance Operations	✓		✓	✓				
Loan Underwriting, Administration/ Servicing			✓	✓	✓			
Virtual Customer Assistance			✓		✓			
Tailored Products & Recommendations	✓	✓						
Forecasting/Modelling	✓	✓			✓			
Deals/Products Pricing	✓	✓			✓			
Documents/Agreements Review & Processing			✓	✓	✓			
FX Execution/Confirmation			✓	✓				
Targets & Deals Due Diligence	✓	✓		✓	✓			
Risk & Fraud Analysis	✓	✓						
Real-time Payments			✓					
Integrated Receivables			✓					
Trade Processing			✓	✓				

These roles work towards developing Data, Analytics, Modelling and Application Platforms and tools across the Commercial Banking Value Chain and Digital Use Cases

Technologies: RPA & Data Analytics have automated the redundant back-office workloads which allow the bank employees to focus on core finance activities

Technologies

Roles

Key Activities and workloads

Key Use Cases



Robotic Process Automation

- RPA Developer
- RPA Tester
- Business Systems Analyst – RPA
- RPA Designer
- Lifecycle & Methodology Lead - RPA
- RPA COE Solution Consultant

- Automate several commercial banking **back-office processes** based on the input from internal departments
- **Create Bots for the Automation process** for Front Office and Back Office banking process areas involving web, Java, mainframe, and Windows-based applications
- **Perform stress tests for BOT scripts** to prove scalability and stability of RPA code
- Assist automation projects to troubleshoot potential bottlenecks
- Identify and mitigate business risks associated with solution architecture
- Develop **Process Design Document (PDD)** to capture end to end user keystrokes



- **ANZ implemented RPA to fix time-consuming operational errors** which occurred daily, they were able to reduce resources from 40 to 2.
- **BNY bots are being used to streamline the firm's trade-settlement procedures.** Tasks include clearing trades, resolving discrepancies done in ¼ of a second



Data Analytics




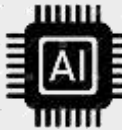



- Strategic Analytics Associate
- Advanced Financial Analytics Consultant
- Compliance Officer - Data Analytics and Reporting
- Risk & Compliance Analytics Consultant
- Client Intelligence Analytics Developer

- Implement **Cybersecurity and anti-fraud data analytics** for digital authentication strategies
- Responsible for **credit loss forecasting and portfolio risk management** for Business Banking
- Collect, review, interpret, and analyze data and/or documentation to ensure **compliance with the department SLAs, policies, procedures** and/or regulatory and risk requirements.
- Responsible for customer level data extraction and quantitative analysis focused on identifying growth opportunities
- Develop **analytics based products for internal usage** regarding **client intelligence, payments processing, trade analytics, credit risk analytics** among others



- Analytics based fraud analytics and behavioral pattern detection JP Morgan Chase
- **State Bank of India's E-Smart SME** is using data analytics gathered by e-commerce players **to assess the creditworthiness of sellers**

Technologies: Cloud & AI based roles are helping banks in developing analytical tools to enhance product development & advisory services across the value chain

Technologies	Roles	Key Activities and workloads	Key Use Cases
 <p>Cloud</p>	<ul style="list-style-type: none"> • Cloud DevOps Engineer • Product Manager, Hybrid Cloud • Information Security Cloud Engineer • Cloud Migration Lead • Hybrid Cloud professional • Cloud Solutions Architect 	<ul style="list-style-type: none"> • Document and analyze customer requirements. Define future state vision for Cloud Services • Integrate internally developed components (API's, web services, broker services, MQ and Data Power artefacts). • Collaborate with Online Banking and Mobile development teams to deliver cloud-hosted solutions which meet the current and future standards and needs • Provide a cloud workflow orchestration services based on open source products (Orchestration As A Service) • Incorporate multiple deployment models for infrastructure automation frameworks through Hybrid Cloud 	<ul style="list-style-type: none"> •  Santander's Openbank is using a hybrid model of the private and public cloud to improve the provisioning of resources for running its ML capabilities in real-time •  DBS is collaborating with AWS to create a hybrid cloud environment which is optimized for rapid changes of capacity and functionality
 <p>Artificial Intelligence/ML</p>	<ul style="list-style-type: none"> • AI System Analyst • AI Developer • NLP Developer • ML Engineer • Conversational AI Engineer • Computer Vision & ML Engineer • NLP & ML Researcher 	<ul style="list-style-type: none"> • Develop various statistical and ML techniques to develop segmentation, predictive models, experimental designs, and decision analyses • Develop algorithms to optimize pricing, product offering, and distribution channel • Transform data into impactful business insights, strategy recommendations and implementation plans to improve key performance metrics for the business • Data analysis, data mining, and prepare modelling datasets from multiple data sources • Build and manage chatbot and virtual assistant platforms to deliver conversational experiences for customers and team members across the bank 	<ul style="list-style-type: none"> •  Citibank is utilizing AI/ML to automate the cash application process of matching open invoices to payments received •  HSBC is integrating AI & screen data for suspicious activities to help spot money laundering, fraud and terrorist activity. •  JP Morgan uses Natural Language Processing (NLP) to automatically interpret and review commercial-loan agreements

Note: Analysis is based on the DRAUP's proprietary engineering database, updated in Dec 2018

Technologies: Open API & Blockchain roles are redefining the payments/transactional workflow, banking applications development & security architecture of banking systems

Technologies

Roles

Key Activities and workloads

Key Use Cases



Open API

- API Developer
- Global Transaction Banking API analyst
- Open Banking Commercialization manager
- API Enabler- Open Banking
- API Product Manager

- Create PISP (Payment Initiation Service Provider) solutions API for transaction banking
- Asset Finance solutions by data flow through APIs for better decision making
- Connection bank's business lines and management with start-ups to develop concrete business solutions that will be mutually profitable
- Manage the end to end IT delivery of the Open Banking solutions, through Agile at scale, continuous delivery, MicroServices & API Architecture
- Manage build of the Cloned Corporate bank, delivery & implementation of core banking systems, integration of platforms, data, testing, deployments



- **Citi Bank's** solution allows clients to **integrate Citi's APIs into their treasury processes to deliver payments in real time**
- **Standard Chartered** has an API portal for transaction banking, which **enables 3rd party developers to optimize management of Working Capital, Account Balance** among others



Blockchain

- Blockchain Developer
- Blockchain and Distributed Ledger Strategist
- Cyber Blockchain Specialist
- Consultant, Blockchain Innovations
- DLT Propositions manager

- Involved in the Systems Development Life Cycle (SDLC) phases like Design, Development and Testing
- Develop applications using blockchain technology
- Implement Equity Options Trading solution using blockchain as a proof of concept for decentralized distributed ledger technology
- Build a payment system on the blockchain platform which can be used to Send and receive payments by the participating banks in the network
- Build a multi-bank Trade Finance platform help, digitize trade documents and automate processes
- manage leading end-to-end development and delivery of "we.trade" – the world's first live blockchain based open account trade platform



Royal Bank of Canada

- **Bank of America** plans to use the technology for **user identification and validation** and changes to a user's identity.
- **Royal Bank of Canada (RBC)** has trialed DLT at its Toronto blockchain technology center to **improve the speed of payments and optimize Trade Finance**