



BOSTON
CONSULTING
GROUP

Data Strategy and Transformation

Response to RFI

APRIL 2020



Agenda

➤ Executive Summary

Case for Change

Value Based Data Transformation Methodology

Our Action Biased Approach

Credentials

Why BCG

Executive Summary (1/3)



World is changing rapidly, driven by digital & data

- Unprecedented visibility on customer, market data - insurers, partners, ecosystems
- Enabling technologies ready to harness the vast amounts of data (AI / robotics)
- Customers are ready to engage with brands digitally and demand personalization

Ability to build and monetize data assets will drive competitive advantage for insurers in the future



Need for transformation accelerated by Covid-19

- Enabling the teams, distribution partners through right use cases even more critical, especially in the current Covid-19 situation
- Increased relevance of Sales uplift (cross sell), customer reach, churn prevention, improved UW



Significant value for HDFC Life

Rs 150-250 Cr¹

In Year 3

Preliminary estimate basis outside in view

- Rs 40-50 Cr impact in year 1
- 5-10% incremental PAT contribution from analytics driven use cases in year 3

1. Basis BCG experience at insurers of similar size; to be refined with internal data

Executive Summary (2/3)



HDFC Life has a good starting position; Scope to build it into best-in-class

HDFC Life has a good starting position (select observations)

- Deployment of **industry first** infrastructure e.g. data lake
- **Several use cases** underway - eg: hyper-personalization, upsell, attrition management
- Initial steps towards **enrichment** e.g. Bureau data consolidation
- **Strong team** to drive deployment: Data Labs
- Centralized data management team: BI

However, having experienced the build out of several use cases ourselves, we believe there is scope to further enhance the data architecture at HDFC Life and build it into best-in-class (select observations)

- **Expand use cases** across value chain and channels to maximize value
- Create a **single data lake with integrate data flow from multiple systems** and channel partners
- Significant gaps in **data quality can bridged** to drive better business outcomes: eg: contactability, duplicate records, inconsistent records across systems, unique identifiers etc.
- **Expanding sources for enrichment** beyond bureaus to 3rd party data sources and **setting a process** for periodic refresh
- **Democratization** of data through the right platform can lead to better usage of the existing information to drive business decisions

1. Includes pure data strategy and transformation projects. Excludes projects with analytics use cases as a part of larger projects

Executive Summary (3/3)



We have a value based, action oriented approach

- Use case driven strategy and roadmap- prioritizing use cases basis value
- Maximizing value delivery upfront by deploying use cases, while architecture build out execution continues in parallel
- Data Capabilities Maturity Assessment **DACAMA** tool (with 600+ respondents) to benchmark current capability vs. best in class
- Focus on change management and capability building
- Agile way of working by delivering use cases in sprints



We are the right partner

- 9+ years of association with HDFC Life; Growth programs across banca, direct, agency, digital and departments - ops, UW, digital
- Executed more than 800 projects globally, 45 in insurance on e2e data transformation¹
- Specialized team of 800+ Data& Analytics practitioners globally, 200+ in India
- Dedicated team of 1000+ digital and technology specialists globally
- “Right” mix of team: Insurance, Analytics, technology capabilities
- Change management expertise- unlock value through last mile execution

1. Includes data strategy and transformation projects. Excludes projects with analytics use cases as a part of larger projects

Agenda

Executive Summary

➤ Case for Change

Value Based Data Transformation Methodology

Our Action Biased Approach

Credentials

Why BCG

The world is changing rapidly for insurers, driven by digital and data



Data Explosion

Unprecedented visibility on customers, business activities and market trends

Pervasive Digitalization

Omnichannel, sensors, always connected

Enabling Technologies

Processing power, storage and robotics ready for AI and automation

New Consumer

Ready to engage with brands anytime, anywhere

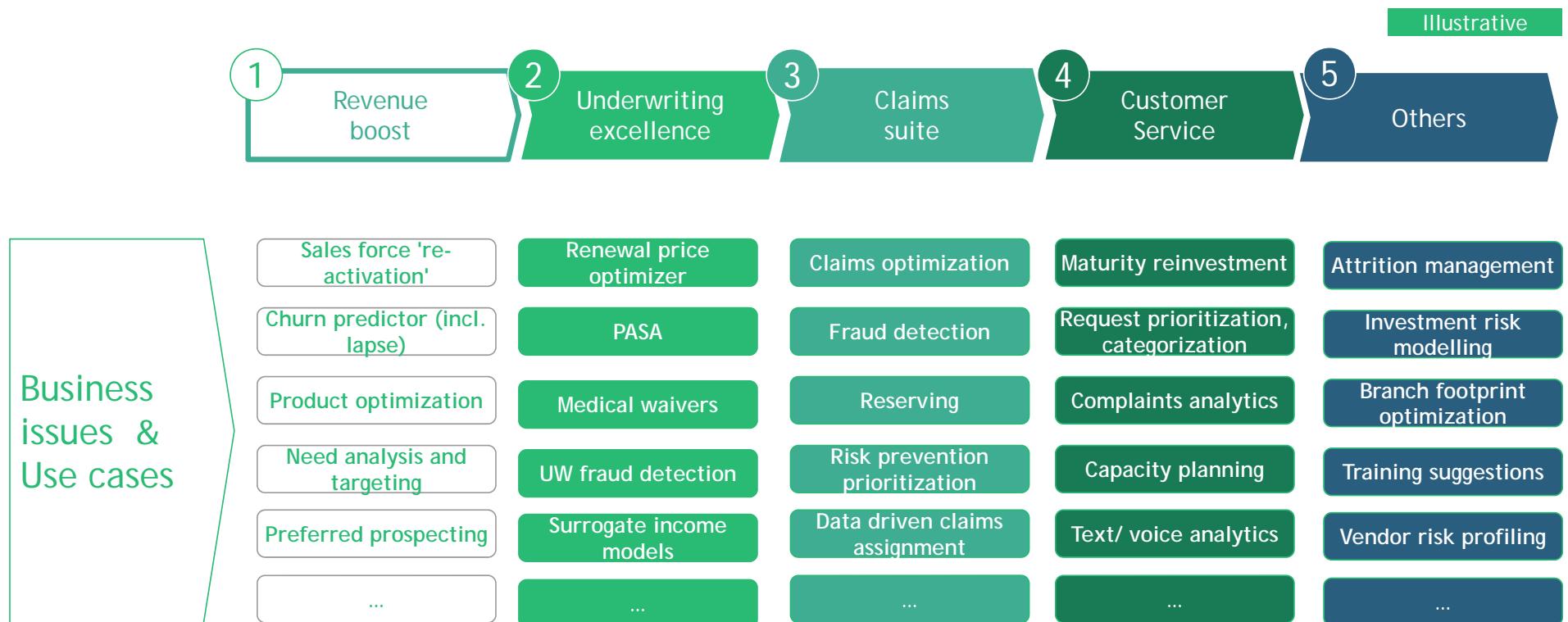
New Market Forces

Disintermediation, sharing economy, crowdsourcing, etc...



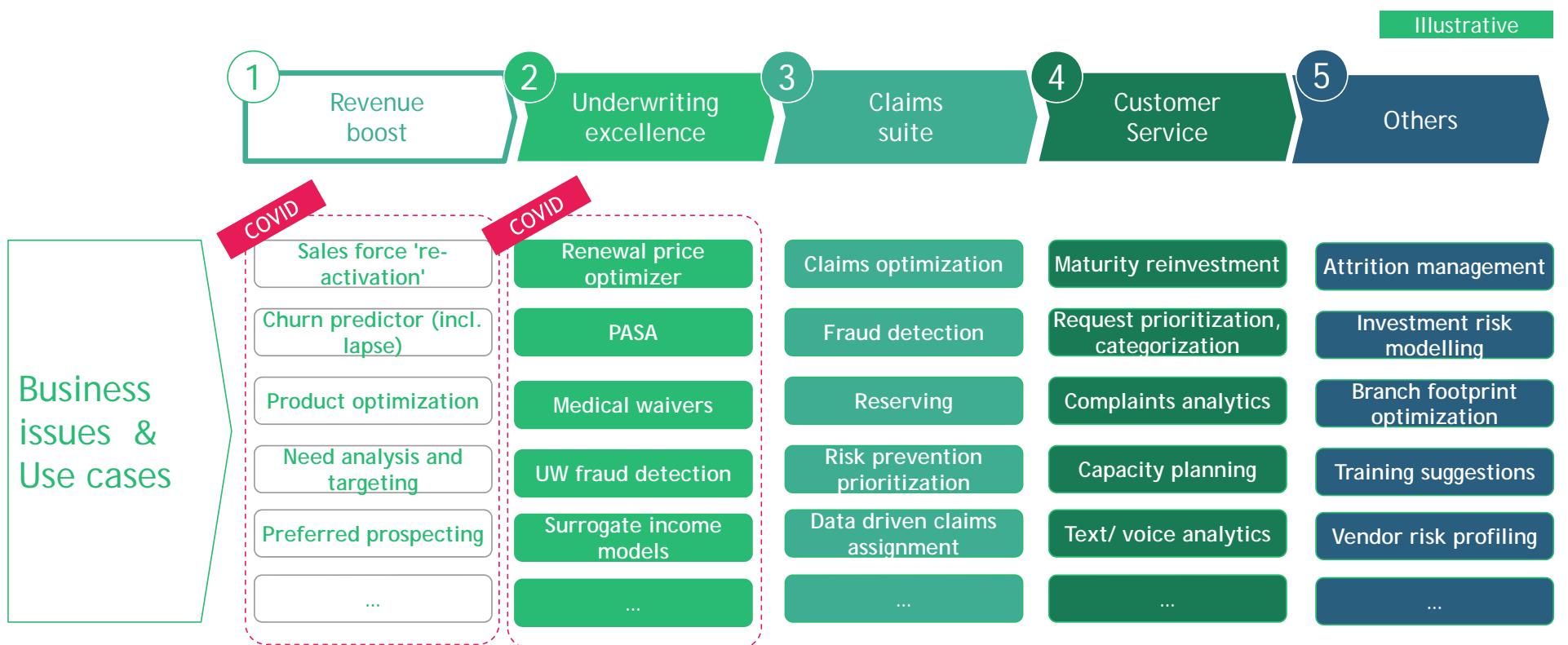
Ability to build and monetize data assets drives competitive advantage

Multiple use cases across insurance value chain



Source: BCG analysis and experience

Given COVID-19, two key immediate Data and Analytics priorities for Insurers:
Revenue boost, Underwriting excellence



Source: BCG analysis and experience



Data and digital transformation can yield significant benefits for insurers



Customer experience

Higher customer satisfaction

- E.g. TAT reduction, seamless journey experience with improved UW, Personalization
- Internal customer satisfaction: Empowered users



Growth uplift

Topline uplift driven by use cases

- E.g. Cross sell, Reinvestment



Higher persistency

Churn reduction, supported by higher customer satisfaction



Improved risk

Improved underwriting, risk management with reduced human errors



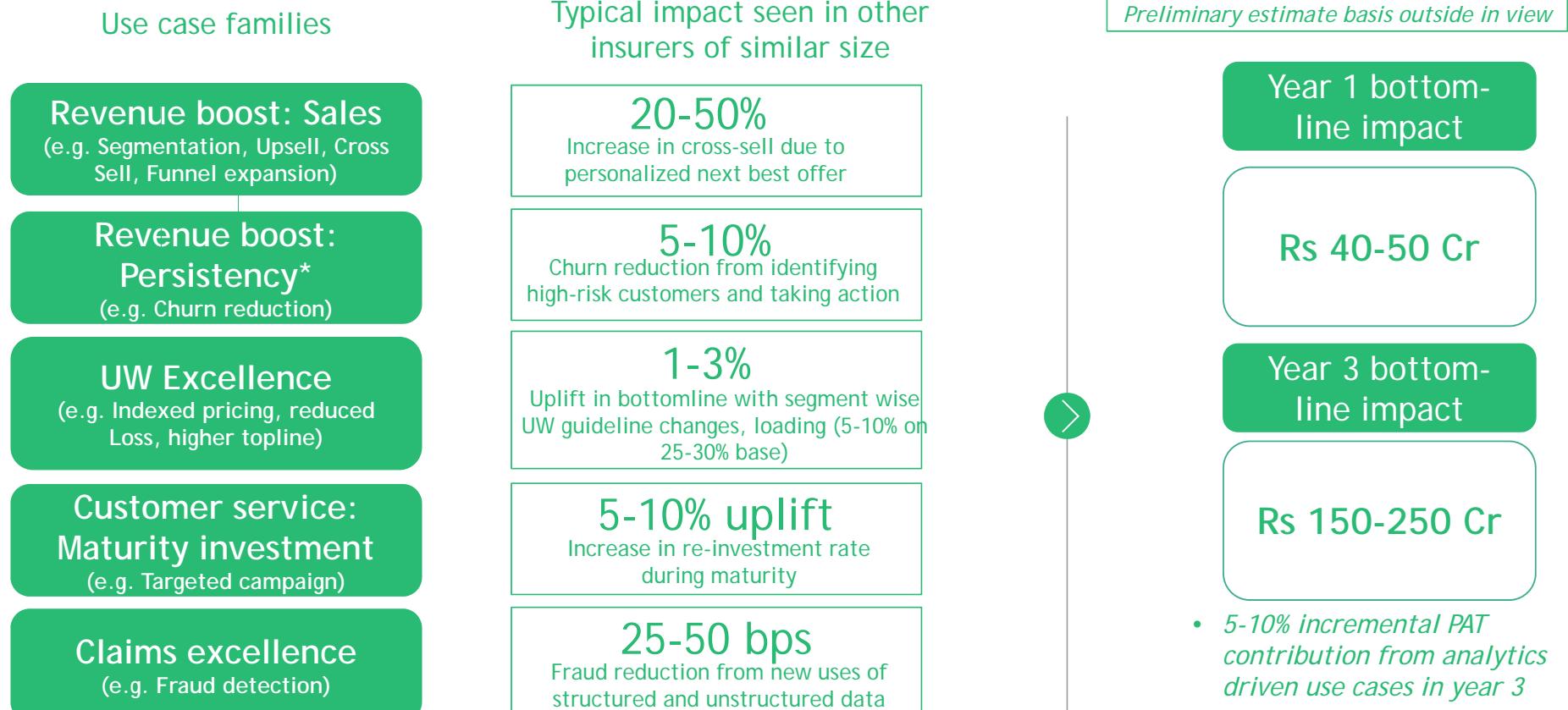
Efficiency

Improved efficiency, leading to long term competitive advantage

- Cost reduction with reduced manual intervention
- Reduced claims leakage
- Higher employee productivity, satisfaction

1. Basis BCG experience at similar insurers

We believe there is significant bottom-line impact of Rs. 150-250 Cr in year 3* for HDFC Life through data & digital transformation



- Based on similar experience with other insurers. 2-3 use cases assumed to be implemented in year 1; Profitability of new business and total business assumed to be same at 20%
- 1. Natural PAT growth assumed 15% and ANBP growth at 20% 2. Top 5 Use cases considered across channels 3. FY 19/ FY 20E Base considered for ANBP, PAT for extrapolation Assumptions for FY 20: Cross sell base of Rs 300 Cr; Renewal base of Rs 2.4k Cr; Claims base of Rs 2k Cr; Maturity base of Rs 3k Cr excluding annuity payouts; ANBP of Rs 6k Cr

* To be refined basis internal data on margins

HDFC Life has built a good starting position on data and analytics

[Select Examples](#)



Architecture



Enrichment



Use cases



Technologies,
tools



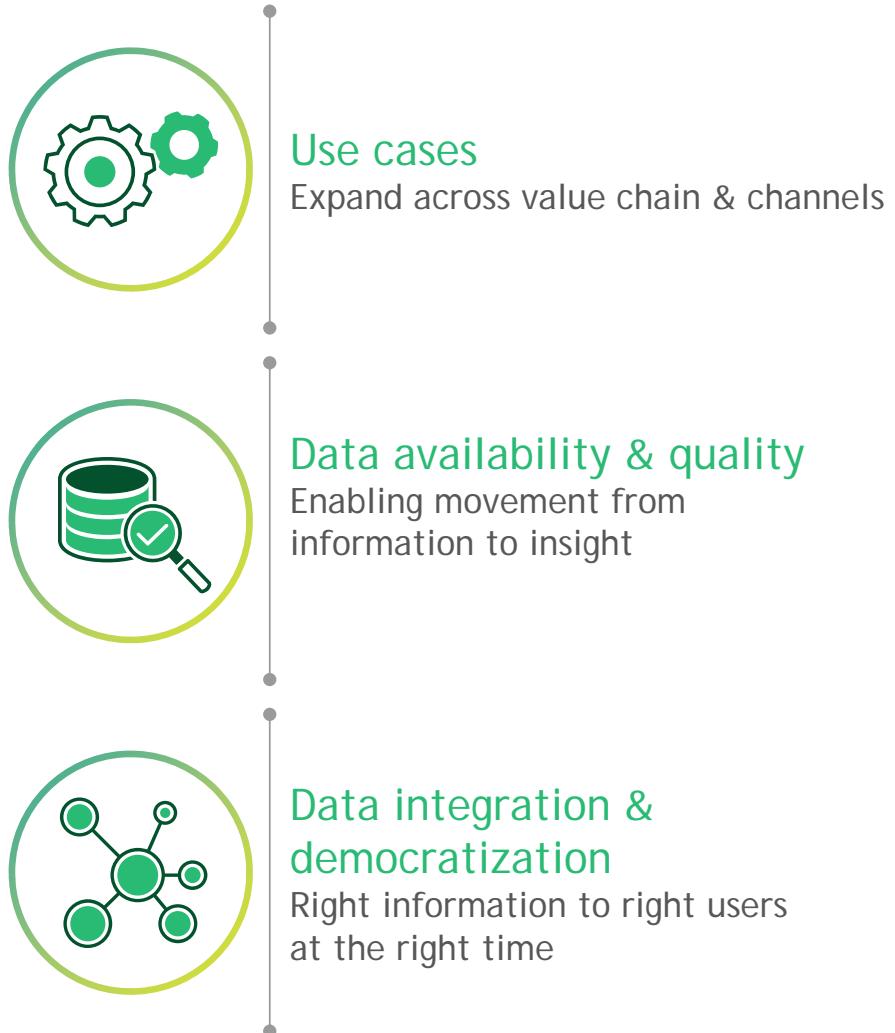
Team:
Data Labs



Governance

- One of the **pioneers in the industry with data lake** for structured and unstructured data
- Continuous efforts to **enrich data through internal and external sources** E.g., Bureau data collation, partnership data through ADCAT efforts
- **Deployment of use cases** to serve business needs E.g., Cross sell, Product recommendation, hyper personalization, PASA
- **AI/ ML deployed in select areas** E.g. Voice sentiment analytics, visual analytics etc.
- **Dedicated team of data scientists and analysts** to continuously enrich data and develop use cases
- **Centralized BI team** to manage organization wide data and MIS

However, potential
to enhance further
to drive best in
class outcomes



While HDFC Life has built out some use cases, potential to expand across value chain to unlock significant value

Select key use cases deployed at other insurers

Type	Use cases		Type	Use cases
Revenue boost	Product	New product development Product optimization	Underwriting excellence	Medical waivers Pricing optimization PASA Surrogate income models UW fraud detection...
	Sales	Need analysis and targeting Preferred prospecting Lead generation Lead scoring		Claims fraud prevention Reserving Data driven claims assignment Risk prevention prioritization ...
		Personalized offers Customer behavior based pitch suggestion		Surrender prediction Reinvestment at maturity
		Product recommendation Next best offer cross-selling		In Banca
		Lifetime value models		Request classification, response strategy
	Marketing	Customer/agent micro-segmentation for personalization		Agent/ employee to customer matching
		Micromarket recruitment strategy		Capacity planning e.g. call centre
		Early warning partner performance trigger		Complaints analytics
	Persistency	Partner churn prevention Personalized Daily task triggers for FLS Recruitment leads targeting Territory design SMP suggestions basis business requirement...		Alerts basis social, partner data Text/Voice analytics ...
		ROI optimization ... Mix modeling Campaign management		In Direct, Agency
		Churn prevention Chanel mix modeling	HR	Recruitment optimization Training suggestions Attrition management
			Finance	Performance prediction ... Vendor risk profiling ...
			Investments	Portfolio optimization Risk modeling...
			Admin	Geo analytics for branch footprint ...

Select use cases deployed/Underway at HDFC Life

Availability & Quality

In our experience while doing upsell modeling for Bancawon, we observed a few gaps



Data collation and modelling



Availability

- Multiple data sources (E.g., Bank STP data managed by BS&T vs. LifeAsia with BI vs bureau with teams); Limited use of data lake/no single central repository
- Call centre, FLS previous attempt and response data not maintained (mSD logs, call centre logs)
- Transaction details (in T-line data) not consolidated E.g., Missing dates



Quality

- Customer drop offs E.g., Mobile number missing (~10%); Income data missing (10+%)
- Limited customer 360 degree view; Multiple customer IDs for same individual with multiple policies
- Limited frequency of refresh E.g., Dated product masters/dictionary

Lead generation and execution (Integration with business/departments)

- Call centre data preparation not integrated with BI and Data labs and hence lack of clarity on exclusions, resulting in higher drop-offs
- Call centre MIS maintained externally (vendor)—not available at HO
- Post calling logs not available in HO to assess performance enhance design
- Multiple handovers between BI (Life Asia), Data Labs (COP and filtration), Banca team (LG-LF mapping) required to prepare call centre data
- Different lead ids used by calls and field leading to inaccurate business mapping (e.g., LCR, Met ratio)
- Lack of detailed performance MIS from call centre (no unique key for HO, no region wise benchmarking)

Significant gaps in data quality can be bridged to drive better business outcomes

Preliminary and illustrative



Availability & Quality

- ⚡ **Low customer contactability** E.g. 30% for direct
- ⚡ **Lack of single customer identifier**, limiting comprehensive view, increasing drop offs, inaccurate measurement of cross sell
- ⚡ **Duplicate records**/varying deduping logics: Dedupe done basis Mobile, PAN, DoB However missing mobile nos (~10%), mail (~50%), PAN (~60%)
- ⚡ **Multiple sources of truth due to silos** E.g., FLS-SP mapping at consultant corner, portal leading to incorrect partner payments
- ⚡ **Multiple data lakes-** managed by BS&T, ADCAT; However, **limited capturing & usage of unstructured data**
- ⚡ **Limited mining of partnership data** E.g., Paytm user behavior for product suggestion



Integration

- ⚡ **Limited integration** of data flow with right units E.g., Mobile number with CP partners, **Lead id from call centre to field**
- ⚡ **Non integration and mapping of Net Banking business** (due to missing LG code) for HBank with BI
- ⚡ **Limited real time integration** E.g., Bank data for PASA
- ⚡ **Lack of structured consolidation of call centre logs, mSD logs, video, chat logs** for future use nor any direct integration
- ⚡ **Decentral bureau** partnership data resulting in post facto mapping, drop offs



Democratization and business use

- ⚡ **No single Data dictionary/ catalogue:** Definitions vary basis context
- ⚡ **Long TAT** for data request turnaround due to lack of inbuilt access rights and self service options within organization
- ⚡ **Lack of a unified view of key data points** necessary for analysis and **decision making** (E.g., Calls, logins/conversion data for funnel analysis; conversion TAT/market share on conversion)
- ⚡ **Limited traceability** with multiple handoffs
- ⚡ **De-central data management in excels, multiple ownership** by departments resulting in inaccurate business mapping/ reporting E.g., Direct campaigns

Summary: Data transformation has a huge value at stake and it is the right time to act



Readiness

The world is changing rapidly, driven by digital and data. Ability to build and monetize data assets will drive competitive advantage for insurers in the future

- Unprecedented visibility on customer, market data - insurers, partners, ecosystems
- Enabling technologies ready to harness the vast amounts of data (AI / robotics etc.)
- Customer are ready to engage with brands digitally and demand personalization



Relevance

Enabling the teams, distribution partners through right use cases even more critical, especially in the current Covid-19 situation

- Increased relevance of Sales uplift (cross sell), customer reach, churn prevention, Underwriting



Advantage

Good starting position, however potential to expand suite of use cases and drive outcomes

- Improving quality, enrichment, democratization and ensuring last mile integration



Value

Significant bottom-line impact of Rs. 150-250 Cr in year 3¹ for HDFC Life through data and digital transformation

- Multiple benefits including improved customer experience, higher topline, reduced cost, higher persistency, improved risk

1. Basis BCG experience at similar insurers

Agenda

Executive Summary

Case for change

➤ Value based Data Transformation Methodology

Our action oriented approach

Credentials

Why BCG

We have value based, action oriented way of execution



Value driven

- Use-case driven; prioritized by value
- Deliver business value as early as possible



Quick to deliver

- Proof of concept->Value proof->Scaling up
- Agile way of working from day-1



Data

- Robust data validation and centralization where feasible



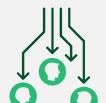
Governance

- Right processes and balances for democratization
- Build visualization tools for interacting with data platform, displaying outputs



Data Platform

- Build for performance, stability and scale
- Automate/centralize data processes from early on



Integration

- Integrate the outputs from Algos to "Operational systems"
- Building ecosystems to achieve value



Driving change & Capability building

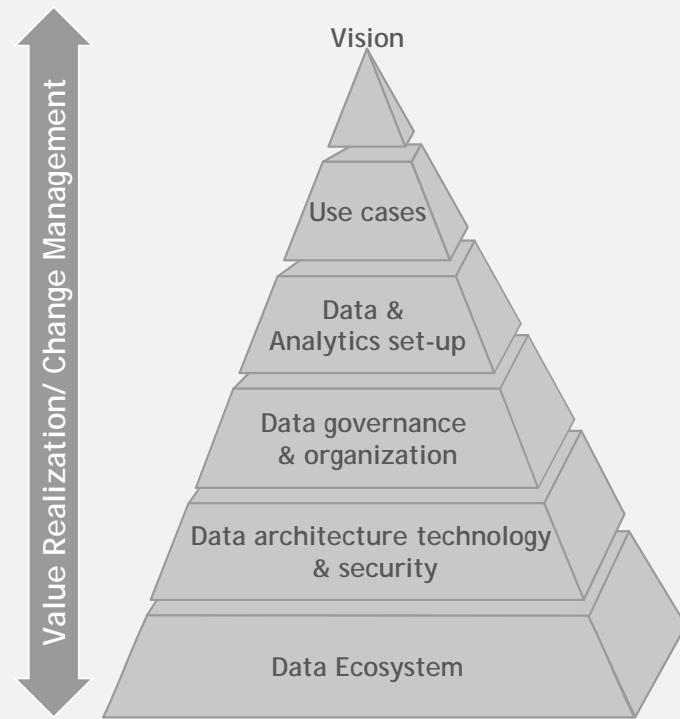
- Driving through multi disciplinary teams- Insurance business, Technology, Data & Analytics
- Change management and drive till last mile

"WHAT" to scale: Becoming data-driven

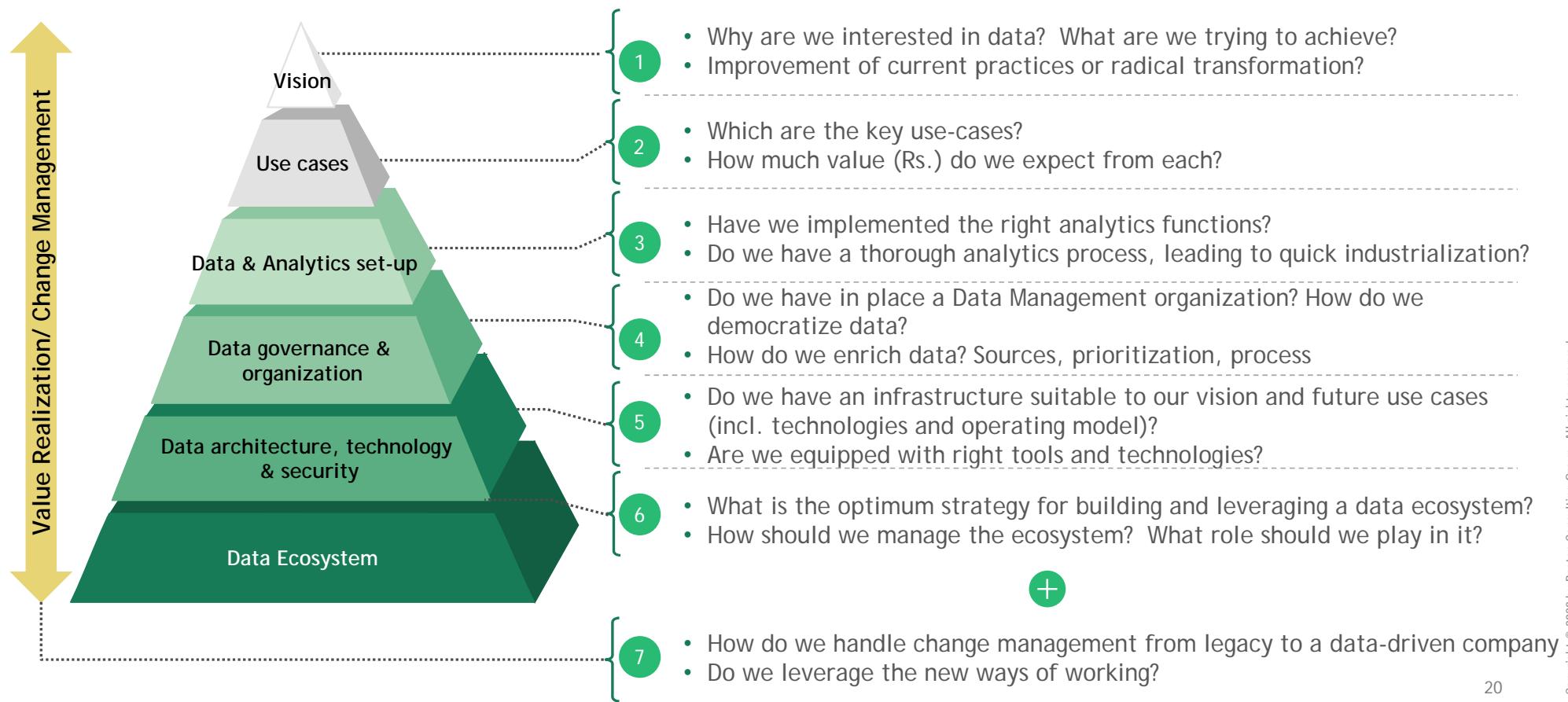
- A Having a sense of the value of data
(The art of the possible)
- B Knowing how to realize this value
(Business specific use cases)
- C Having a realistic roadmap
(Rome was not built in one day)
- D Building the necessary capabilities
(Guided and prioritized by uses cases)
- E Implement effectively use cases
(It's not "just" data science)

"HOW" to scale: Data Capabilities Model

Not Exhaustive



BCG's comprehensive Data Capabilities Model helps drive a robust data strategy



Data strategy vision should include three key elements and be supported by the organization

Vision Document should include three key elements



Purpose describing the overall goals
e.g., ensure data strategy allows.
Democratization/ easy access to good quality data for reporting and advanced analytics



End deliverables and responsibilities

- Responsibilities need to be visible and measurable to ensure accountability
- e.g., (near) real time data availability



Activities and processes Data Strategy have mandate for

e.g., **measuring quality** and increases in usage of data elements/ reports in decision making

Support from the organization should be secured through three additional elements



Vision translated into concrete Data Strategy goals. Goals need to be in line with the overall organization/ business strategy



Positive business case to secure organization buy-in includes benefits from Data Strategy initiatives



Communication plan, spreading the vision throughout the organization

Best in class companies set vision across key areas and have quantified goals

Illustrative vision for a financial institution



Best in class
vision

Value creation

Contribute 10% to the revenue in next 3 years in a sustainable and cost effective manner

Deep personalization to increase cross selling

Increase the average products per customer to 1.5 in next 2 years

Integrated data ecosystem to enhance customer insight

Establish new partnerships and technologies



Use cases

Implement prioritized use cases across businesses to generate value e.g.

- Cross sell
- Churn prevention
- Agent attrition

Processes

Manage use case delivery process in end to end manner. E.g.

- Upsell model industrialization
- Manage campaign calendar, tracking, performance review



Organization

Build a specialized team that acts as a business unit

- Team of 150 equipped with business and technical skills
- An independent campaign team



Tool and technology

Develop tools for on ground adoption, democratization, and Omni-channel customer experience



Data ecosystem

Design best in class data infrastructure that enables big data analytics

- Single source of truth
- High data quality
- Partnerships with Fintechs, bureaus

HDFC Life can expand use cases across value chain and channels

		Select key use cases deployed at other insurers	
	Type	Use cases	
Revenue boost	Product	New product development	
		Product optimization	
		Need analysis and targeting	
		Preferred prospecting	
	Sales	Lead generation	In EDM channel
		Lead scoring	
		Personalized offers	
		Customer behavior based pitch suggestion	
		Product recommendation	In Banca
		Next best offer cross-selling	
	Marketing	Lifetime value models	
		Customer/agent micro-segmentation for personalization	In Direct, Agency
		Micromarket recruitment strategy	
		Early warning partner performance trigger	In Agency
		Partner churn prevention	
		Personalized Daily task triggers for FLS	
		Recruitment leads targeting	
		Territory design	
Persistency	Marketing	SMP suggestions basis business requirement...	
		ROI optimization ...	
		Mix modeling	
		Campaign management	
	Persistency	Churn prevention	
		Chanel mix modeling	
Underwriting excellence	Underwriting excellence	Medical waivers	
		Pricing optimization	
		PASA	
		Surrogate income models	
	Claims suite	UW fraud detection...	
		Claims fraud prevention	
		Reserving	
		Data driven claims assignment	
		Risk prevention prioritization ...	
		Surrender prediction	
Customer service	Customer service	Reinvestment at maturity	In Banca
		Request classification, response strategy	
		Agent/ employee to customer matching	
		Capacity planning e.g. call center	
		Complaints analytics	
		Alerts basis social, partner data	
	Others	Text/Voice analytics ...	
		Recruitment optimization	
		Training suggestions	
		Attrition management	
Admin	HR	Performance prediction ...	
		Vendor risk profiling ...	
		Portfolio optimization	
	Finance	Risk modeling...	
		Geo analytics for branch footprint ...	
	Investments		
	Admin		

Select use cases deployed/Underway at HDFC Life

The prioritized use cases and corresponding business value drive the overall Enterprise wide Data Strategy & Transformation

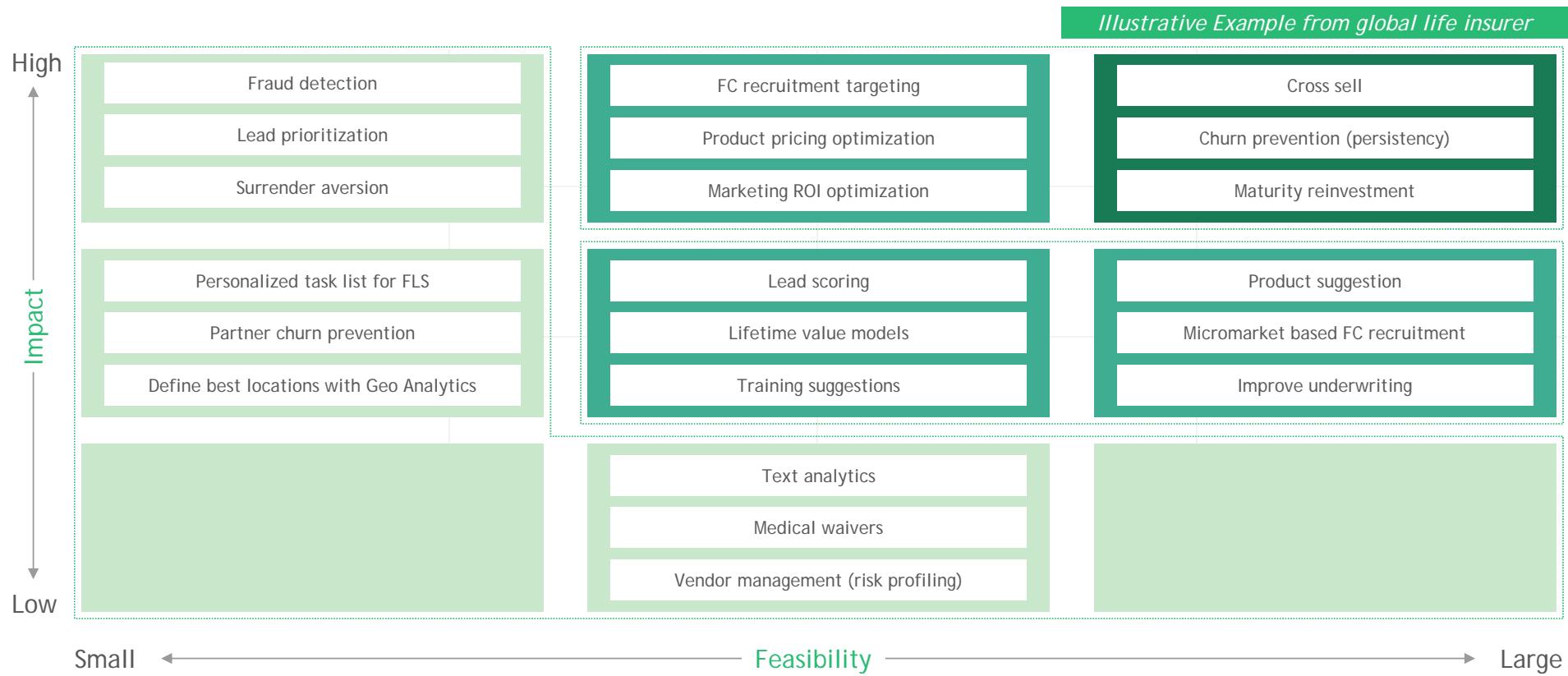
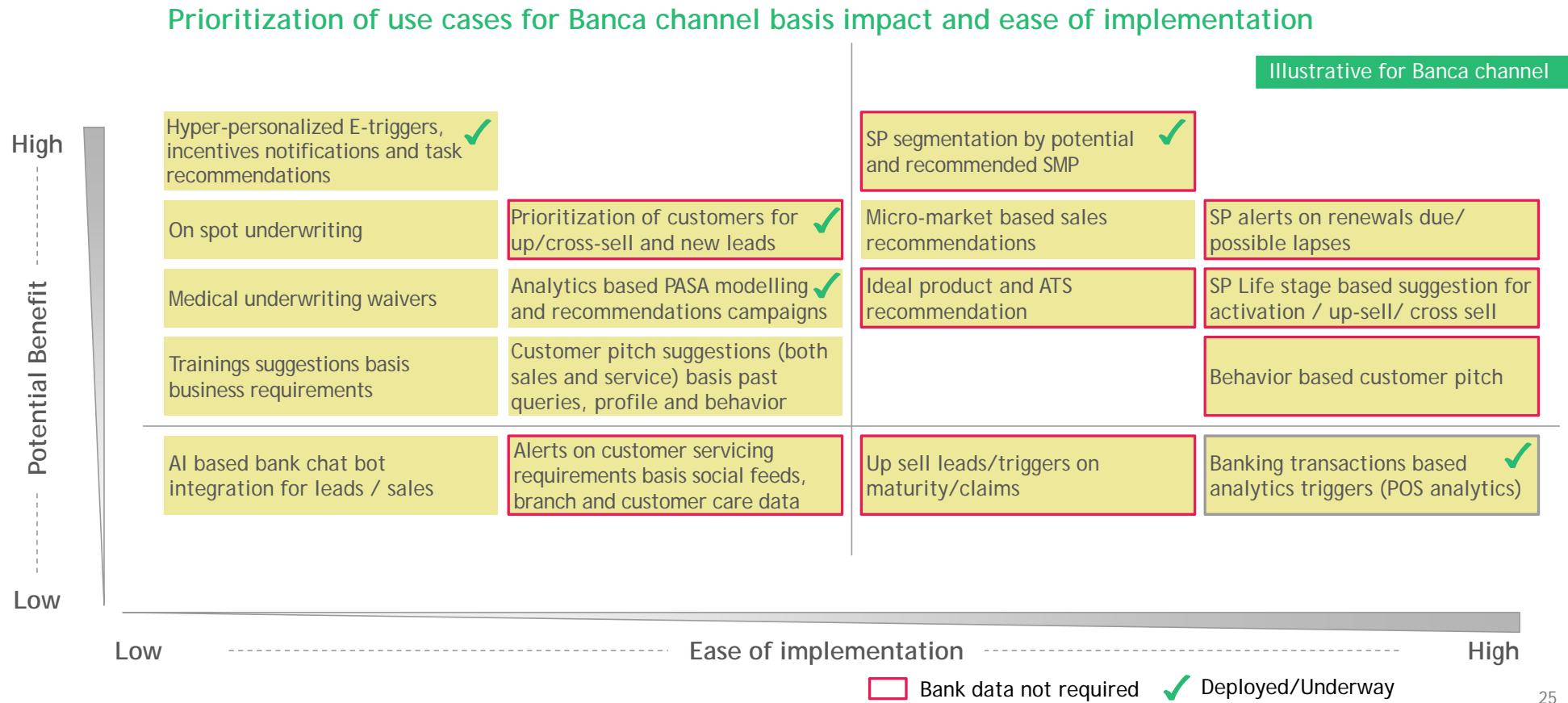


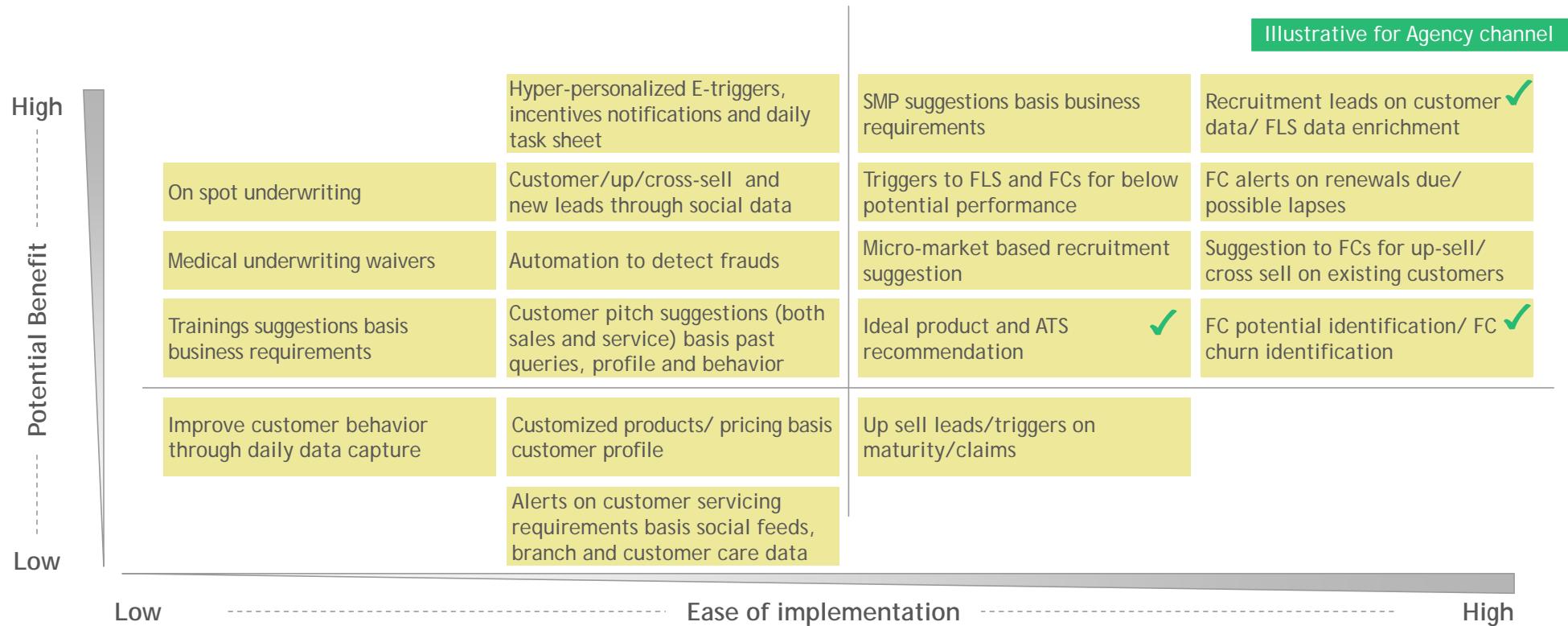
Illustration 1: Use cases and prioritization for Banca channel for HDFC Life



Source: BCG project experience

Illustration 2: Use cases and prioritization for agency channel for HDFC Life

Prioritization of use cases for Agency channel basis impact and ease of implementation

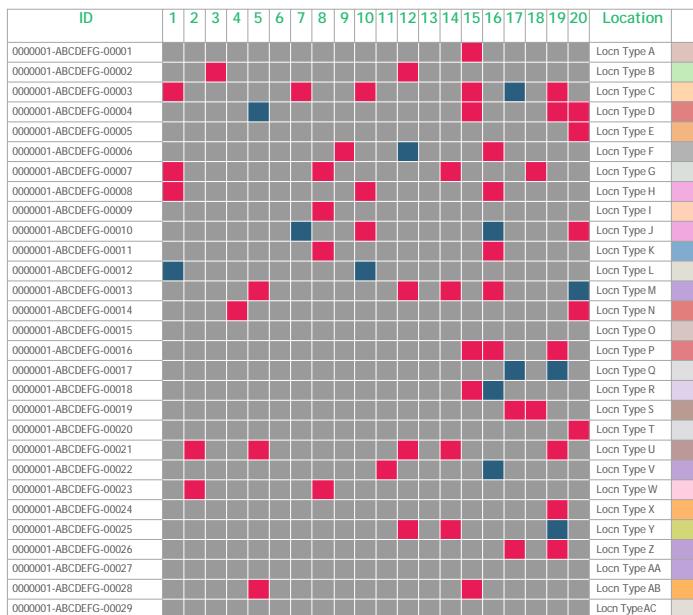


Source: Company data, discussions with stakeholders, field discussions, external benchmarking, BCG analysis

Personalization through micro-segmentation key to increasing value

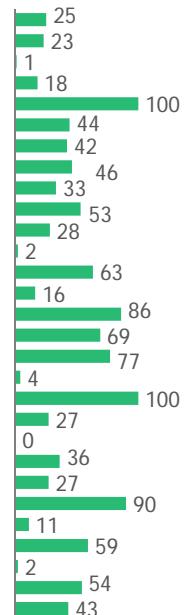
Individual customer-product propensity scores

Products

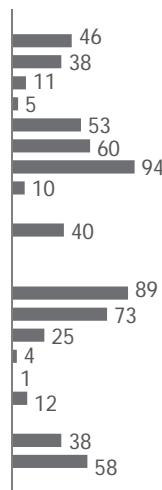


Analytics at individual level—by spend category and Income;
Machine learning to link spending behaviours to insurance offers

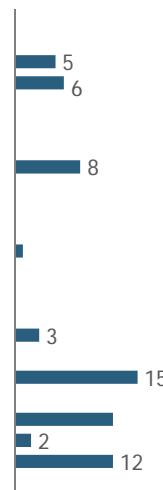
Engagement score



Risk score



Headroom



Differentiator

Micro-segmentation at 50:1 or lower; who to offer what, and when ... with different strategies to max profit, min lapse

What it is not- Granular Propensity to buy model

Impact

Conversion rate 5-10% for digitally originated leads (traditional is 0.5-3%)

Responses to marketing pushed to customers

Lapse risk

Headroom to Customer Lifetime Value (profitability)

We have worked on micro-market strategy and visualization use case at HDFC Life during Agency Life Project

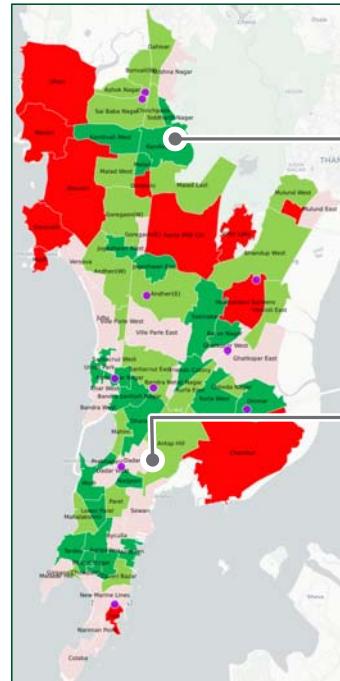
Illustrative

Greater Mumbai

Key statistics for area covered¹:

- Area size: ~380 km²
- Population: 1.28 Cr
- Per Capita Income: Rs 4.9 lacs
- Households earning > 5 LPA: ~17 lacs
- Addressable market density (HH > 5L/ sq km): 4.5k HH/ Sq km
- Total ATMs: ~3100
- Total bank branches: ~4000
- HLI branch count: 11

Addressable Market (Households earning > 5 LPA) Density



Borivali W

- Population: 1.3 L
- #HH >5L: 18k
- Per capita income: 6 L

Dadar W

- Population: 65k
- #HH >5L: 9k
- Per capita income: Rs 5.8 lac

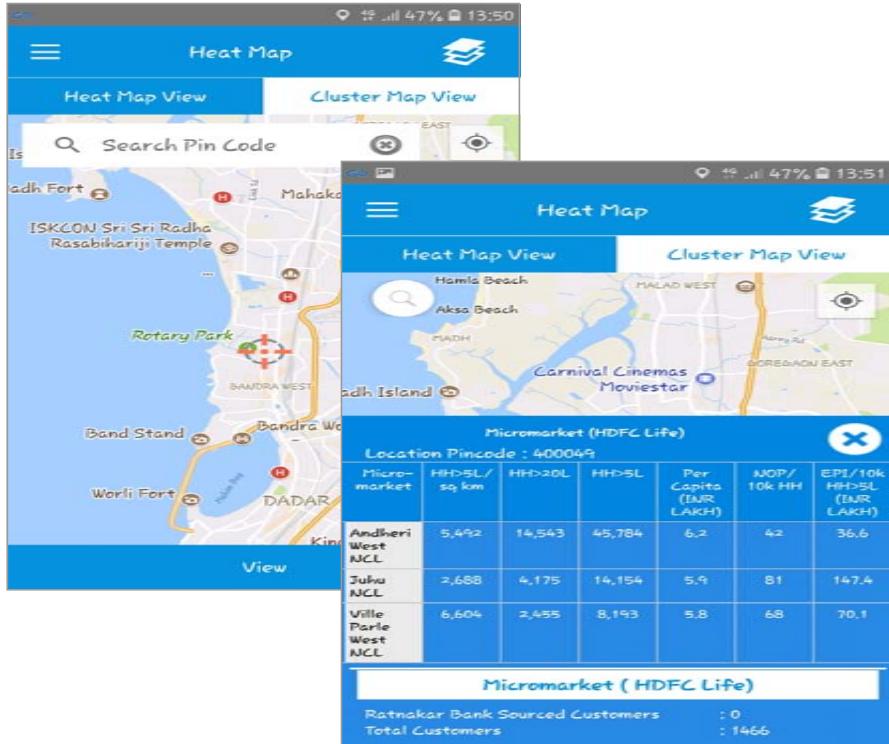
EPI/ 10k HH³



● HDFC Life Branches

Source: Nielsen aggregated data from National Sample Survey Organization (NSSO), National Data Survey of Savings Patterns of Indians (NDSSPI), District -level Household Survey (DLHS), Registrar General of India, the National Account Statistics (NAS), Central Statistical Organization, Reserve Bank of India (RBI), Economic Census , BCG CCI Income model

Easy to use visualization tool developed for field consumption on Insta-Go



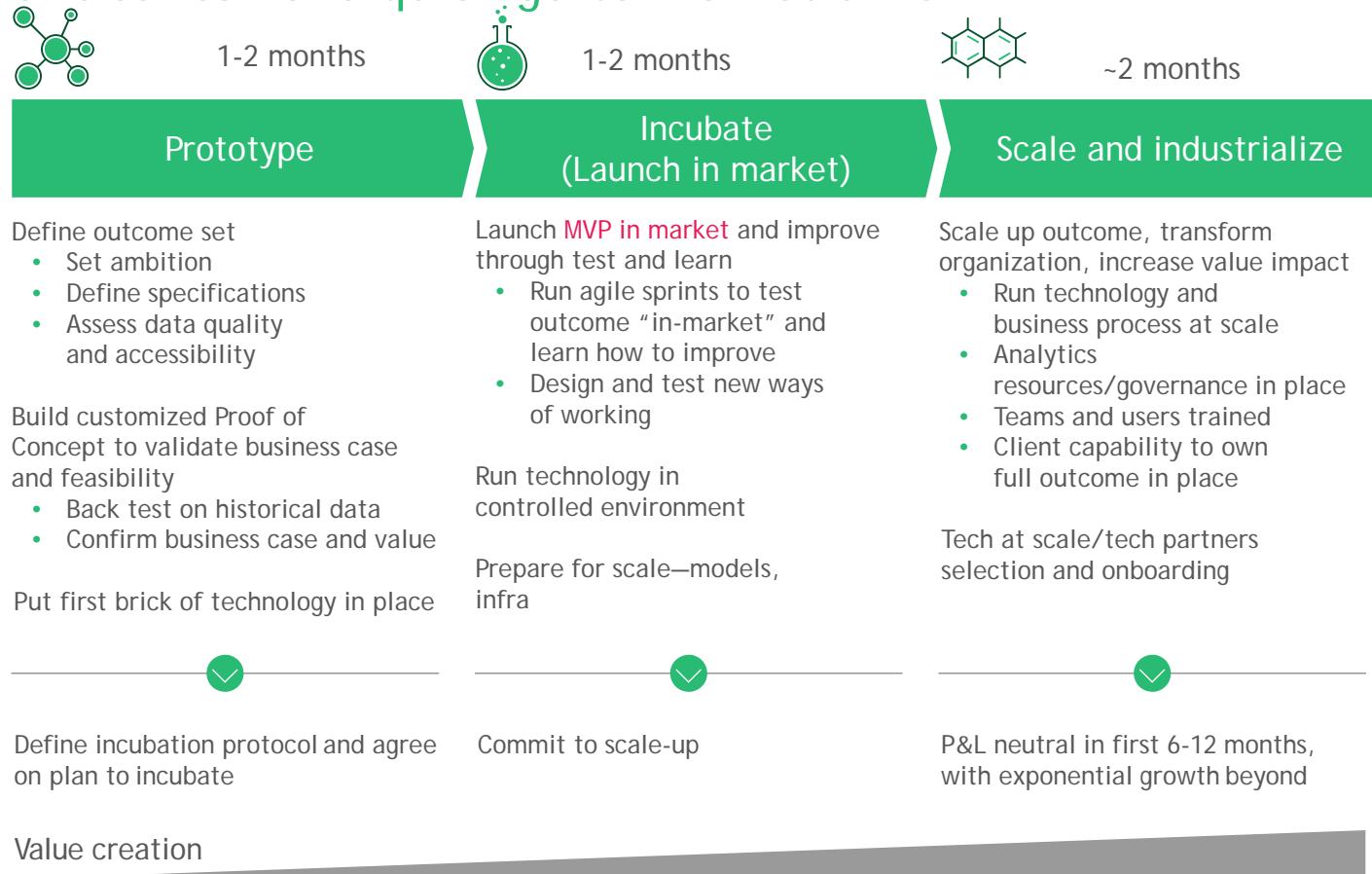
Tool supports view of

- Pin code wise micro-markets
- Micro-market wise potential
- Micro-market wise data insights
- Search for pin-code and get insights

Clear color-coding for actionable insights

Integrated plan for auto geo alerts and heat maps

Standardized process from idea generation to industrialization of use cases critical to have quick go-to-market time



Outcomes: Sprint to Value

Articulated case for value capture

Tangible prototype with business case and plan to execute

MVP with impact assessment and scaling plan

Full scale outcome integrated into environment with new ways of working instilled in team

Tangible prototypes and MVPs to ensure value delivery

Prototyping Cycle			
	Prototype	Incubate	Scale and industrialize
 UI	Tableau/R-Shiny	MVP Web App	Web App
 Model	"Handheld"	Live model	Automated model
 Data	Data dump	Live data ingestion	Live data ingestion in production
 Infrastructure	Laptop/VMs/analytics platform	On analytics platform and API	Scaling infra/automation of back-end

Four key pillars for structured data governance

Data structures: What and where is the data

- MECE data domains (and their owners), families, business data objects
- Prioritization of data domains and families on the basis of the company's projects
- **Data dictionary, catalogue**, flow and models if and where needed

Data organization : How we organize ourselves

Key stakeholders, mandates, R&Rs for each participant

- Decision framework, specifying different levels of decision-making authority



Data policies: What rules we put in place

- Policies corresponding to Client issues and root causes, mainly
 - Data quality policy
 - Master Data Management
 - Data accessibility/ democratization policy
 - External data acquisition policy

Tools & Reporting: What tools we use

- Basic data hygiene tools supporting the data models, data dictionaries, data flow maps (for **cyber security and regulatory compliance**)
- Advanced data management tools, adapted to company's needs: MDM, lineage, KQI automation

Note: MECE = Mutually exclusive, collectively exhaustive; MDM = Master Data Management; KQI = Key Quality Indicator; TOM = Target Organization Model; R&R = Roles and Responsibilities
Source: BCG analysis

Data enrichment critical for value maximization: Sources and data parameters identified basis use cases

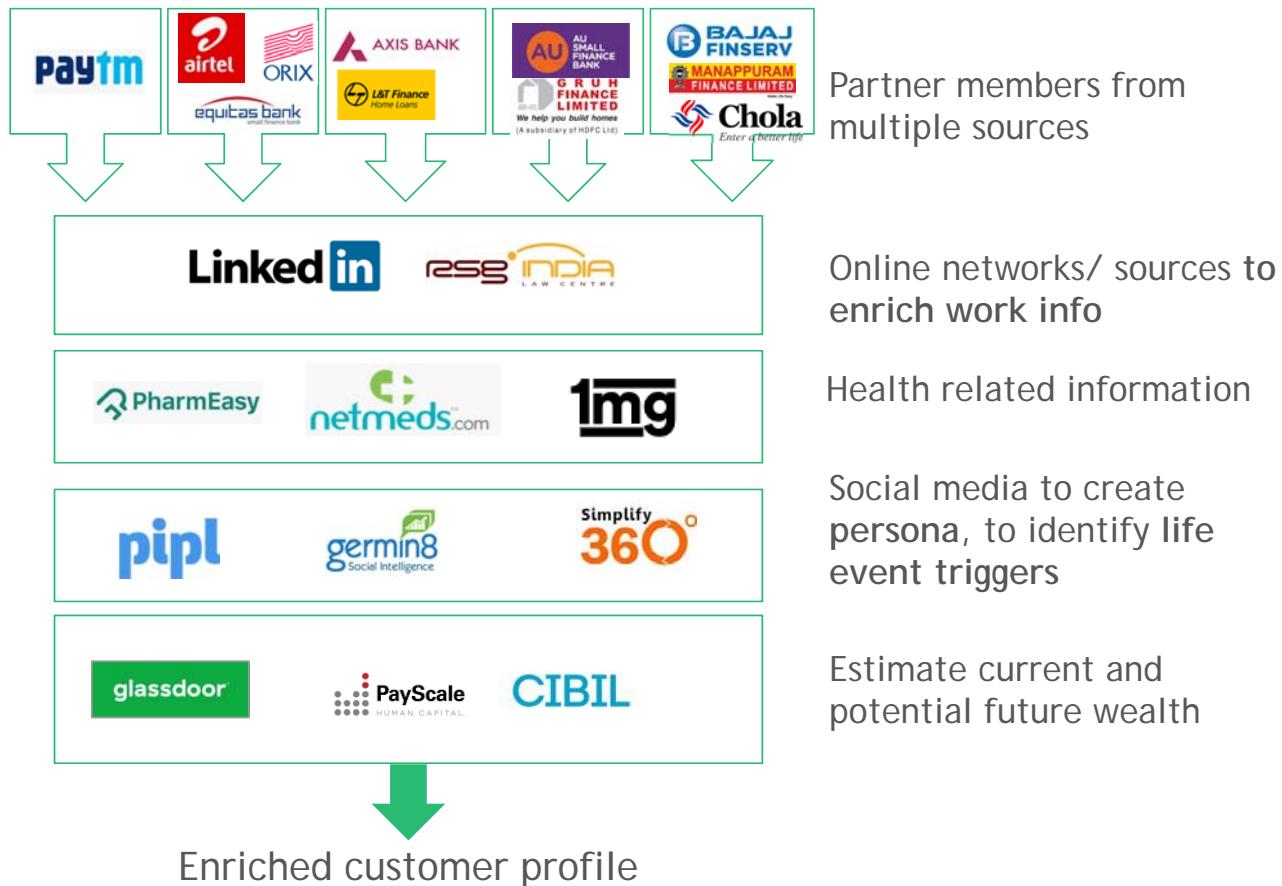
Identify data required across use cases

Internal	Customer / family info. • Customer basic data • Family members	Marketing & Sales • Campaign data • Lead data
	Claims history • Claim history / status • Approval history / status	Servicing history • Support request history • Communication history
	UW history • Underwriting history • Notification history	Maintenance history • Policy change history / status
External	Life log / health-related • Healthcare data (health exams, wearables, etc.)	Life event • Marriage info • Child birth info
	Online behavior • Social network data • Website visit duration	Purchase behavior • Merchant POS info • Merchandise info
	Use status of public service • Criminal records • Socio-demographic data	Risk score • Credit score • Cash flow analysis

Mapping of activities to enrich data

- Process change to capture missing fields at customer service touch points
- Integrate call center/relationship management data with data lake
- Process change and communication to capture fields mandatorily in proposals
- One time and on-going process to integrate data from banking partners/ brokers/ agents with client data
- Explore data partnerships with existing online partners
- Data enrichment arrangements with credit agencies/bureaus and ecosystem partners
- Social media analytics partners

Existing partners along with new partnerships and social media can be leveraged for enrichment

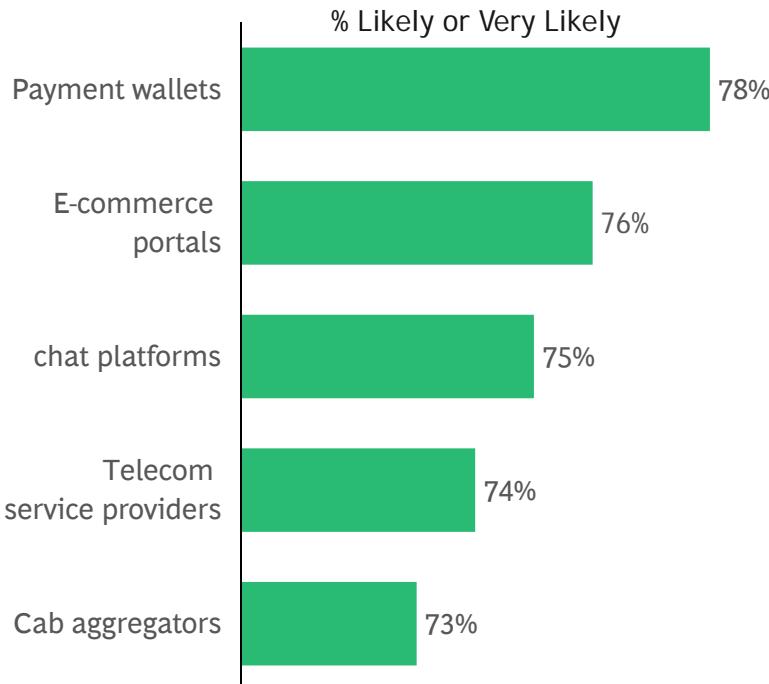


Illustrative : Select examples

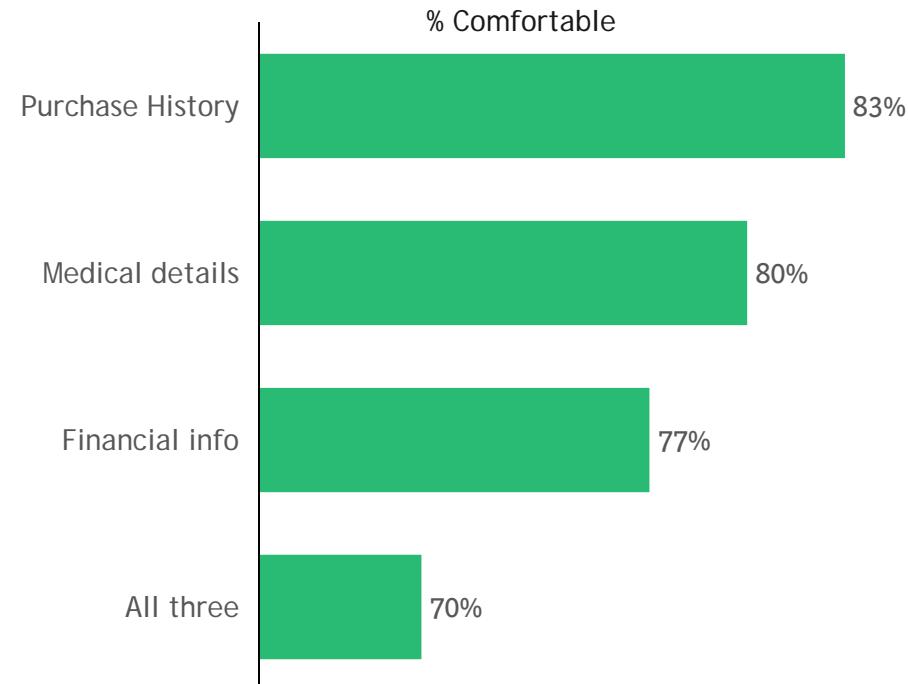
- Opportunity to create a funnel of target clients with enriched profiles
- Include triggers basis events (e.g., title change on LinkedIn, child birth on Facebook)

BCG research shows that digitally mature customers are ready for non-traditional channels and personalized offers

HOW LIKELY ARE YOU TO BUY INSURANCE FROM NON-TRADITIONAL CHANNELS?



HOW COMFORTABLE ARE YOU IN SHARING DATA FOR A PERSONALIZED OFFER?



Source: BCG-FICCI Insurance survey (2019), n = 3,300

Note: Digital Maturity defined basis number of categories consumer buys online: <=3 Low, 4-6 Medium, >=7 High

Potential to consolidate multiple sources to create single customer view



Single customer view

- 360 degree view capturing holistic picture of a insurer' customer was developed
- Consolidation of multiple data sources
- Create derived variables to gain more insight into customer behavior Policy Holder Data

Dimensions in single customer view



Policy Holder Data

- Policy Holder ID
- Dependent ID
- Sum Insured (SI)
- Product Name
- Policy Period
- Renewal
- Agent Name
- Agent ID
- Policy start date
- Policy end date
- Policy renewal date
- Policy endorsement date
- Floater/Individual
- Family structure
- Top Up
- Retail/Group
- Payment Frequency
- Payment Method
- Base Premium
- Support Premium
- Post Code



Demographics Data

- Gender- (PH and Dependent)
- DOB- (PH and Dependent)
- Profession
- Qualification
- Address
- Income
- Marital status



Claim Data

- Policy Holder ID
- Dependent ID
- Sum Insured (SI)
- Product Name
- Policy Period
- Date of Admission (DOA)
- Date of discharge (DOD)
- ICD Code Level-1
- ICD Code Level-2
- ICD Code Level-3
- Claim date
- Paid date
- Claim Amount
- Paid Amount
- Cheque sent Date
- Provider name
- Cashless/reimbursement
- Admission reason-Primary
- Admission reason-Secondary



Provider Data

- Provider Name
- Provider ID
- Network/Non Network
- Address
- Type of provider (Super specialty/Multi specialty etc.)
- Bed Capacity
- Emergency capacity
- Critical care facility
- Training facility
- Year of existence



Agent Data

- Agent ID
- Regulatory License no
- DOB
- Address
- Joining Date
- Gender
- Marital Status
- Incentive Grade



External Data

- Bueraus
- Social media data
- Govt. Accreditation of provider
- Banks
- Distributors
- Health apps/Wearable
- Hospital network
- Online Pharma
- Loyalty networks
- Health aggregators
- Payments
- Online travel
- Online marketplaces
- P2P e-commerce
- Direct/P2P lending
- Health start ups / Health scores
- Telcos
- Personal finance management...

Priority data fields, sources to be identified depending on priority use cases and incremental value

Data Partner	Data needed	Method	Purpose	Opportunities supported
Internal	All policy data (e.g., personal details, policies held), claims history (e.g., incidents, costs) data and metadata (e.g., call times and transcripts)		Individuals	1 2 3 4 5 6 7 8 9 10 11
LinkedIn	Employment status and industry	P 3P	Individuals	4 11
	Professional network connections and associations	P 3P	Individuals	7
	Profile details (name, date of birth, marital status)	P 3P	Individuals	5
Facebook	Profile details (name, date of birth, marital status)	P 3P	Individuals	3 5 9 11
	Social network connections and associations	P 3P	Individuals	1 2 4 9
Banks	Channel preferences for purchasing and transacting	F	Individuals	4
	Bank account balances and transactions	3P	Individuals	2 3 6 9
Telcos	Channel preferences for purchasing and transacting	F	Individuals	4
	Telephone and internet connections and disconnections and account transfers	F	Individuals	2 3 6 9
Non-bank card issuers	Credit card balances and transactions	3P	Individuals	6 9
Health insurers	Claims histories (incidents and injuries, diagnosis and treatment codes and costs)	F	Individuals	1 2
Richer mobile interaction	Mobile GPS location	F	Individuals	5 9
	Photos and description of vehicles owned, homes lived in and home contents owned	F	Individuals	5 6 8
	Searches for peer-to-peer appliance and car rental	F	Individuals	5 9
	Searches for cheap petrol, home tradespeople, local vets	F	Individuals	5 9
Other insurers (through ICA)	Claims histories (incidents and injuries, costs)	3P	Individuals	2
Law enforcement organisations	Criminal records of individuals including court judgements	P 3P	Individuals	2 7 9
ABS	2011 census	P	Groups	4 5
Medical practitioners (e.g., Doctors)	Procedure summaries (work performed, workers involved, cost)	F	Individuals	2 10
Customer survey	Channel preferences for purchasing and transacting, satisfaction level and purchase behaviour	F	Individuals	4 10
Credit bureaux	Credit ratings of individuals	P	Individuals	9
	Customer profile verification (addresses)	P	Individuals	2 4
Real estate websites or RP Data	Internet home listings (addresses, value, agent responsible)	P	Individuals	3 6
Personal Property Securities Register	Specific vehicle licensing details (registration data, outstanding loan amounts)	P	Individuals	8
Retailers	Grocery baskets (pet food, nappies) and loyalty data	F	Individuals	3 9

P Public/freely purchasable

3P Trusted third party

F Full data share

1 Use case 1

2 Use case 2

3 Use case 3

4 Use case 4

5 Use case 5

6 Use case 6

7 Use case 7

8 Use case 8

9 Use case 9

10 Use case 10

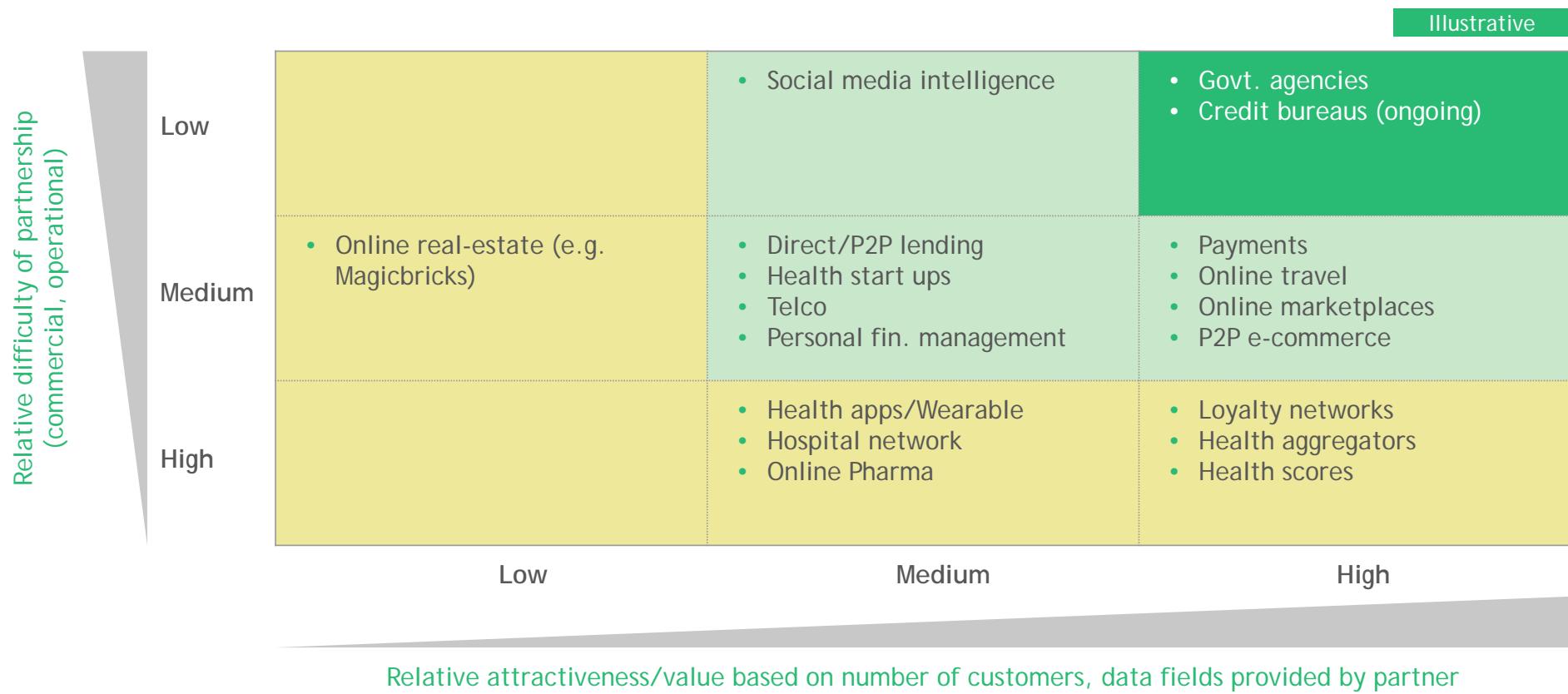
11 Use case 11

New external data partnership, clear target partner

New external data partnership, multiple potential partners

Known/existing initiative

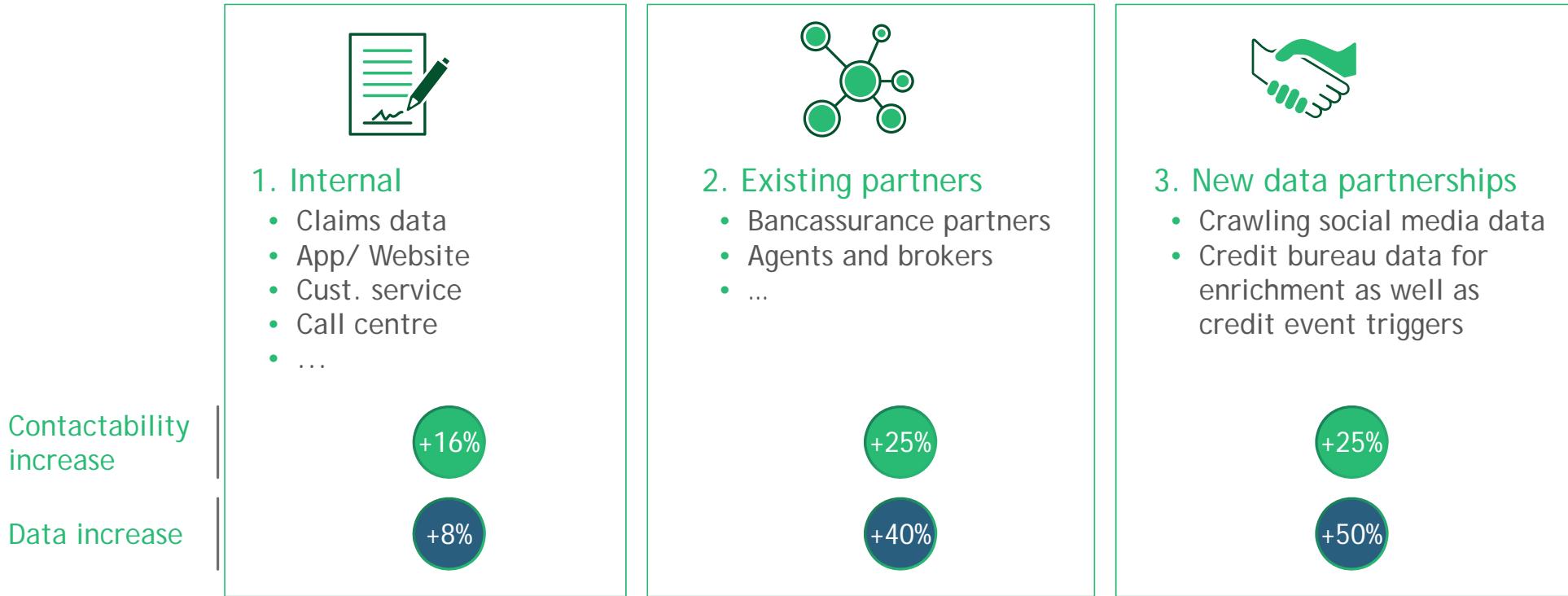
Partnership opportunities could be prioritized basis value, feasibility



Note: On-shore + offshore lending, FI—Financial Institutions, CA—current account, TD—Term deposits

~1.5x increase in contactability can be achieved through enrichment

BCG Case Experience with Insurer in India



Contactability increase 1.5X, data increase 2X

Note: Impact realized based on 50% customer data that is already enriched; further enrichment in progress

We will answer key questions on enrichment approach



What



Where



When



How



Why

Prioritization of parameters for enrichment, along with commercial construct

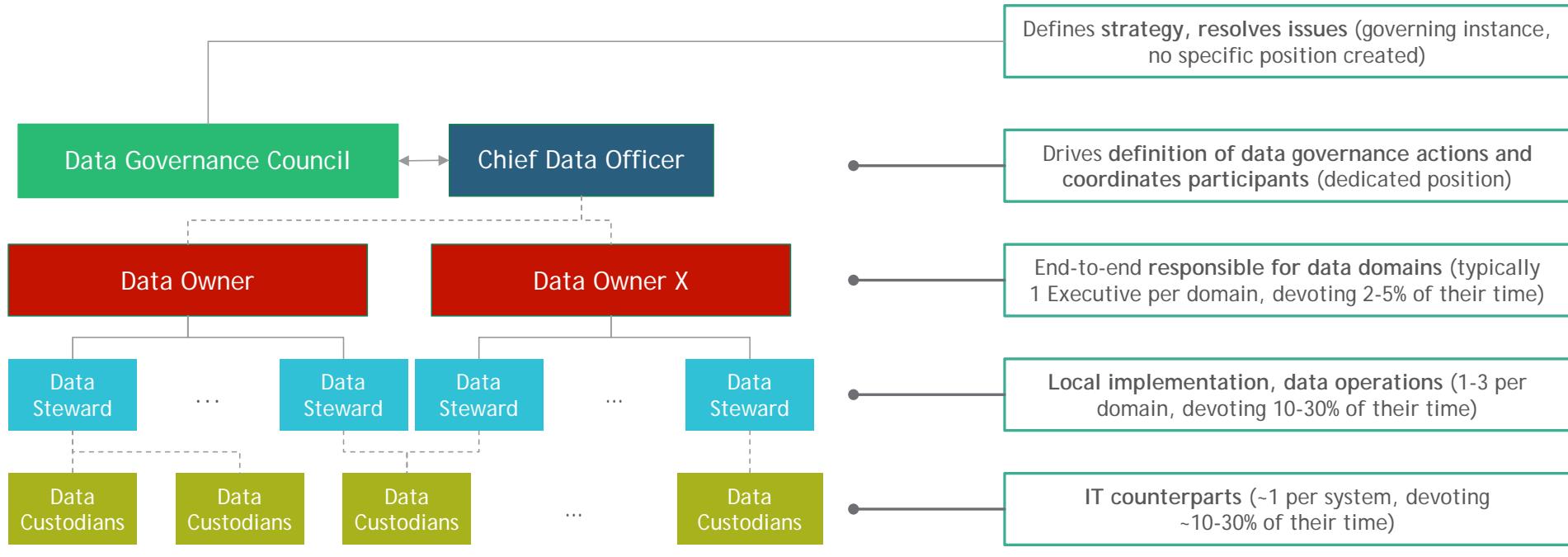
Right data sources for key use cases
• E.g. Social media, health care providers

Optimum frequency of enrichment

Centralized process set up for validation and updation
E.g. Through APIs, decision engines

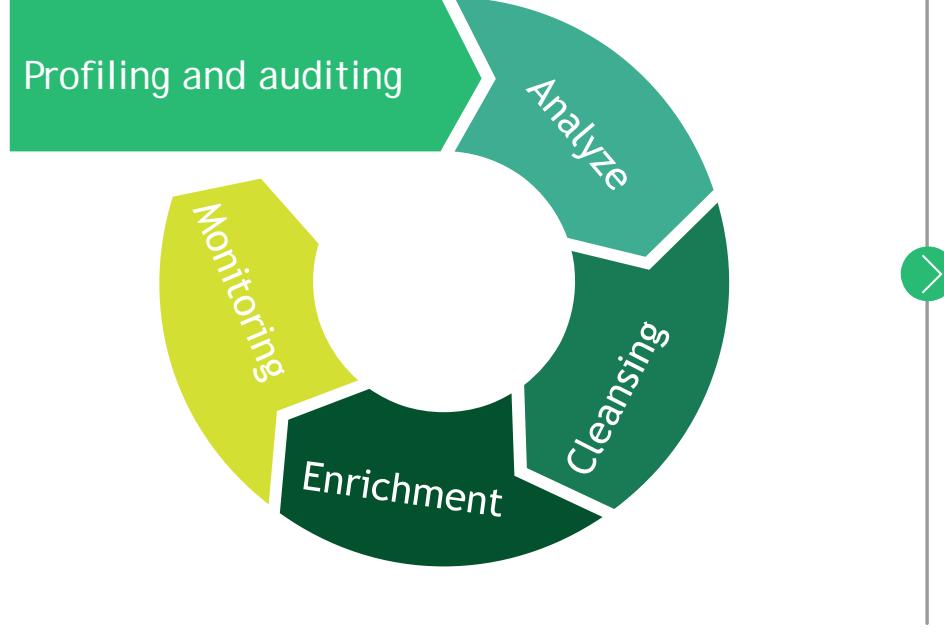
Ongoing prioritization basis RoI basis benefits and associated costs

Best practice companies have structured data governance around five org key roles



Exact titles and granularity of roles may differ in each company

A robust process helps ensure the right level of data quality



- Profiling and auditing: Business and statistic analysis of data
- Analyze: Analyze root causes for poor data quality. Set goal, metrics and rules to reach the right level of quality
- Cleansing: Correction and standardization of data by applying defined rules
- Enrichment: Enrichment from external and internal sources
- Monitoring: Measurement of the KPI and goal achievement then monitoring of the evolution

Data map (domain, families etc.) prioritized based on use cases to help rationalize data elements/ sources

Sanitized client example-n-2 datasets involved in mapped projects to date																<i>Illustrative example</i>				
Individuals		Non-Individuals		Services		Save and Invest			Credit		Protection		Staff/Struct.		Channels		OE Rules and Financials		Reference & External	
ID numbers	Tax	ID numbers	Expenses	Card service	Card relationship	Savings service	Agreement amounts	Receiver	Credit service	Payment definition	Protection service	Receiver	ID numbers	Branch ID	Description	Identification	Rule identification	Individual	Rating	
Name	Sector of activity	Name	Assets	Card variables	Card category	Savings variables	Agreement risk	Status	Credit variables	Payment time	Protection variables	Status	Name	Location	Interaction channel	OE relationship	Liquidity	Non-individual	Market price	
Digital ID	Countries of activity	OE relation type	Cash flows	Account service	Outstanding sums	Securities service	Savings definition	Process definition	Offer definition	Payment channel	Offer definition	Process definition	OE relation type	Branch staff	Interaction time	Financial asset	Rating	Catalogue	Interest rate	
OE relation type	Service model	OE relationship	Source of funds	Account variables	Card events	Securities variables	Savings relationship	Process time	Offer contents	Amount	Offer contents	Process time	OE relationship	Branch services	Interaction trigger	Liability	Exposure	Agreement	Coverage	
OE relationship	Category	Registration	Tax	Offer definition	Security	Private banking service	Savings category	Process content	Marketing	Payer	Marketing	Process content	Birth	OE Relationship	Parties	Equity	Ratios and weighting	Client ledger	Tax	
Birth	Preferences	Incorporation	Sector of activity	Offer contents	Deviation	Offer definition	Savings balance	Activity definition	Agreement definition	Receiver	Agreement definition	Activity definition	Nationality	Phone ID	Agreement	Maturity	Internal flags rules	Process & Event	Public records	
Nationality	Loyalty program	Listing	Countries of activity	Marketing	Payment definition	Offer contents	Savings events	Activity time	Agreement relationship	Status	Agreement relationship	Activity time	Civil status	Phone staff	Offer	Identification	Staff and structure	Channel	Client segment	
Civil status	Public info	Legal structure	Service model	Agreement definition	Payment time	Marketing	Interest accrued	Activity content	Agreement assessment	Process definition	Agreement assessment	Activity content	Contact	Phone service	Status	OE relationship	Channel	Prospect segment	Employee segment	
Address	External assess.	Staff	Category	Agreement relationship	Payment channel	Definition	Securities definition	Task definition	Agreement implementation	Process time	Agreement implementation	Task definition	HR	Time	Session	Land	Offer segment	Offer segment	Offer segment	
Email address	Internal assess.	Address	Preferences	Agreement assessment	Amount	Instrument type	Securities relationship	Task time	Agreement time	Process content	Agreement time	Task time	Function	Web ID	Session time	Building	Hour	Day	Date	
Phone numbers	Default	Email address	Loyalty program	Agreement implementation	Payer	Issuer	Securities category		Agreement amounts	Activity definition	Agreement amounts		Authorization	Web staff	Party	IT	Mobile ID	Pages	OE relationship	
Digital security	Banking secrecy	Phone numbers	Public info	Agreement time	Receiver	Value	Securities management		Agreement interest	Activity time	Protection definition		Skills	Web service	Channel	Machine	Mobile staff	Items	Data	
Spouse	Contact person	External assess.	Agreement price	Status		Maturity	Securities contents		Agreement collateral	Activity content	Protection relationship		Category	Web content	Forms	Equipment	Mobile service	Mobile content	Software	
Child	Digital security	Internal assess.	Agreement amounts	Process definition		Risk parameters	Securities value		Credit definition	Task definition	Protection category		Identification	Mobile ID	Pages	Identification	Mobile content	Mobile content	Geography	
Other dependent person	UBO	Default	Account definition	Process time		Eligibility	Securities risk		Credit relationship	Task time	Damage claims		Location	Mobile staff	Items	OE relationship	Mobile content	Mobile content	Financial place	
Person in charge	Corporate relationship	Banking secrecy	Account relationship	Process content		Agreement definition	Securities maturity		Credit category		Insured value		Management	Mobile service		Data	Mobile content	Mobile content	Legal place	
Employment	Key managers	Financial instit.	Account category	Activity definition		Agreement relationship	Transaction identification		Credit payment		Claim definition		Hierarchy	Mobile content		Contracts	Mobile content	Mobile content	Supplier	
Revenues	Board members		Account balance	Activity time		Agreement assessment	Transaction time		Utilization		Claim time			Identification		Location	Mobile content	Mobile content	Forex	
Expenses	Signatories		Account events	Activity content		Agreement implementation	Transaction channel		Deviation		Claim channel			Contracts		Patent	Mobile content	Mobile content		
Assets	Governance		Deviation	Task definition		Agreement time	Object		Risk		Amount			Cash		Ledger	Mobile content	Mobile content		
Source of funds	Revenues		Card definition	Task time		Agreement price	Payer		Collateral		Claimer			Process		Analytical	Mobile content	Mobile content		

■ 55%+ of projects ■ 35%+ of projects ■ 20%+ of projects ■ 10%+ of projects ■ No project

Right policies, security, data quality and data democratization are the backbone of robust governance



Data Quality

Mission

Define data quality criteria, assessment methodology, quality standards, etc.

- Way to measure data
- Process to improve



Data Democratization

Define data access rules and manage access rights by data domain and entities (CRM teams, marketing) : e.g., direct access or data owner authorization needed



Data Collection

Describe company approach on data collection and storage



Data Documentation

Define rules for master data management (principles to keep a unique version of the field at company level)



Data Security

Formalize access, storage, and protection policies: Manage internal and external threats with financial or reputation impacts

Key objective

- Ensure a common definition of data quality is shared across the organization
- Enable users to quickly access and use data
- Define concrete guidelines to reach excellence in data collection
- Enable use of same and unique reliable data across organization
- Define data protection standards to reach compliance to reduce risk of data leakage

Key data quality indicators: Combined index can help assess future quality improvements

Criteria	Criteria definition	Example of quality indicators
Clarity	Data are understood by all employees and their definition is clear to facilitate their use	High level description exists in Group business glossary
Unicity	Data are unique within whole organization and linked to updated master data	Data are unique within at Métier and Region levels
Completeness	Data are not missing and all data attributes are documented	Data is complete for 70% of customers in each database
Consistency	Data have a single definition and follows same calculation rules	Calculation rules are common at Métier level worldwide
Accuracy	Available data are precise, accurate and regularly updated (fresh) and available when needed (timely)	Data is updated at most on a monthly basis
Integrity	Data are neither altered nor lost during their lifecycle	90% of data remains intact during its lifecycle
Accessibility	Data are accessible for all stakeholders concerned by them	90% of stakeholders concerned can access data at all times
Privacy	Personal Data are properly handled with regards to consent, notice and regulatory obligations	Personal Data meets GDPR regulation requirements

↓

Data Quality Score

Data quality score can be created for periodic measurement

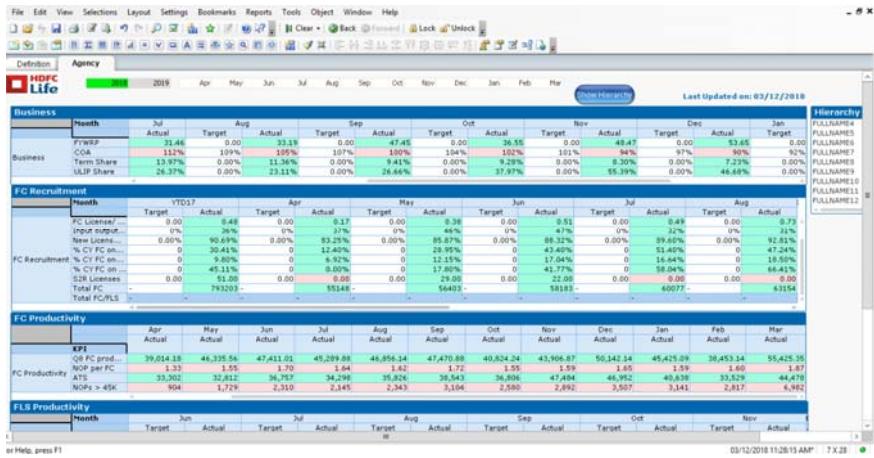
Illustrative: BCG case experience with Indian Insurer

Before enrichment	20%	10%	25%	25%	20%		
Variables	Weigh (%)	Prod.1 (%)	Prod.2 (%)	Prod.3 (%)	Prod.4 (%)	Prod.5 (%)	Variable density (%)
E-mail	25	25	24	24	93	12	39
Phone number	75	79	61	24	32	68	50
Contactability index = 47							
DoB	20	91	33	36	22	96	55
Gender	10	84	87	85	16	60	63
Family size	5	0	0	0	0	0	0
Income Indicator	15	0	0	0	0	0	0
Profession	10	0	0	0	0	0	0
Education	5	0	0	0	0	0	0
Credit score	10	0	0	0	0	0	0
Digital activation ¹	10	7	3	6	83	3	25
Channel disposition ²	15	24	3	8	83	3	28
Data index = 24							

1. % customers activated through digital channels 2. % customers bought from any tele based channel

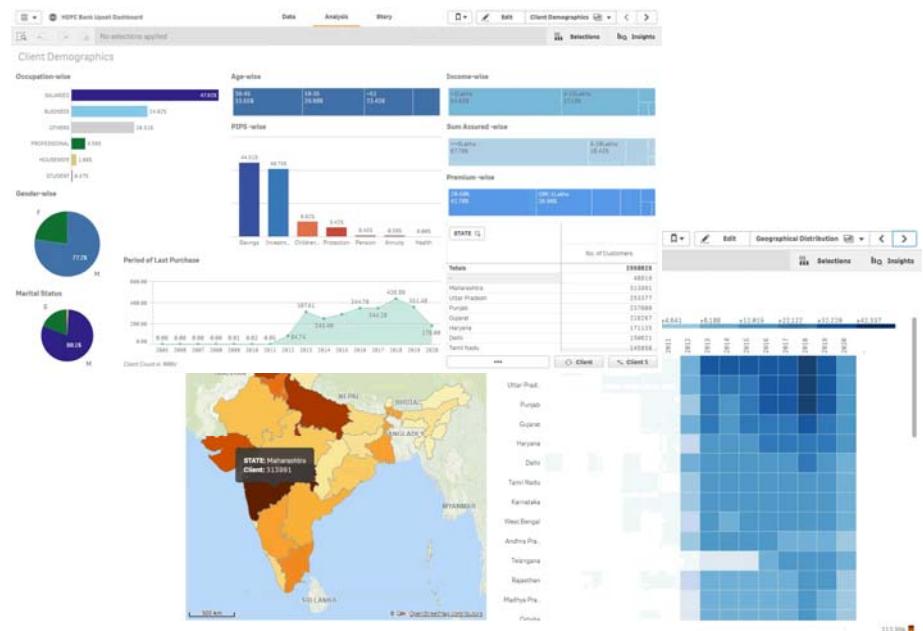
We have worked with your teams to create the right reports and dashboards for quick action and decision making

Illustration: Agency Life Dashboard



- Easy to use
- Hierarchy drill down

Illustration: Banca Upsell Dashboard



There are a few areas of improvement in existing data architecture at HDFC Life

Preliminary observations

- 1 Scaling of AI/ ML/ AA applications using **containerized** models
- 2 Lesser dependency on SAS EG and more focus on Open Source tools
- 3 Infrastructure strategy for **processing unstructured** data (e.g. GPUs etc.)
- 4 Detailed Data **archival strategy** specially for unstructured data
- 5 Infrastructure as a service build out Multi - Cloud strategy
- 6 Production-ready **containerized** models or reports for Multi Cloud Migration
- 7 Leverage tools such as Hashicorp Terraform (**Infrastructure as a Service**) for Multi Cloud Platform
- 8 Platform should support AI APIs and Tensorflow

Key Architecture Principles for building Data Platform Foundations



Scalable & Extensible - enabling incremental and on-demand growth, adaptability with **new tech & enterprise changes**



Flexible & performant - to cater for unstructured/structured, peak-loads and large volumes & variety, real-time & batch



Secure & Available/ Democratized - 24x7x365 availability for a global enterprise and secure for **cyber-security and access control**



Open - non-proprietary & **easy integration of 3rd party solutions** but not systematically



Auditable - built-in tools for traceability and quality checks



Cloud enabled - deployable in public or private cloud

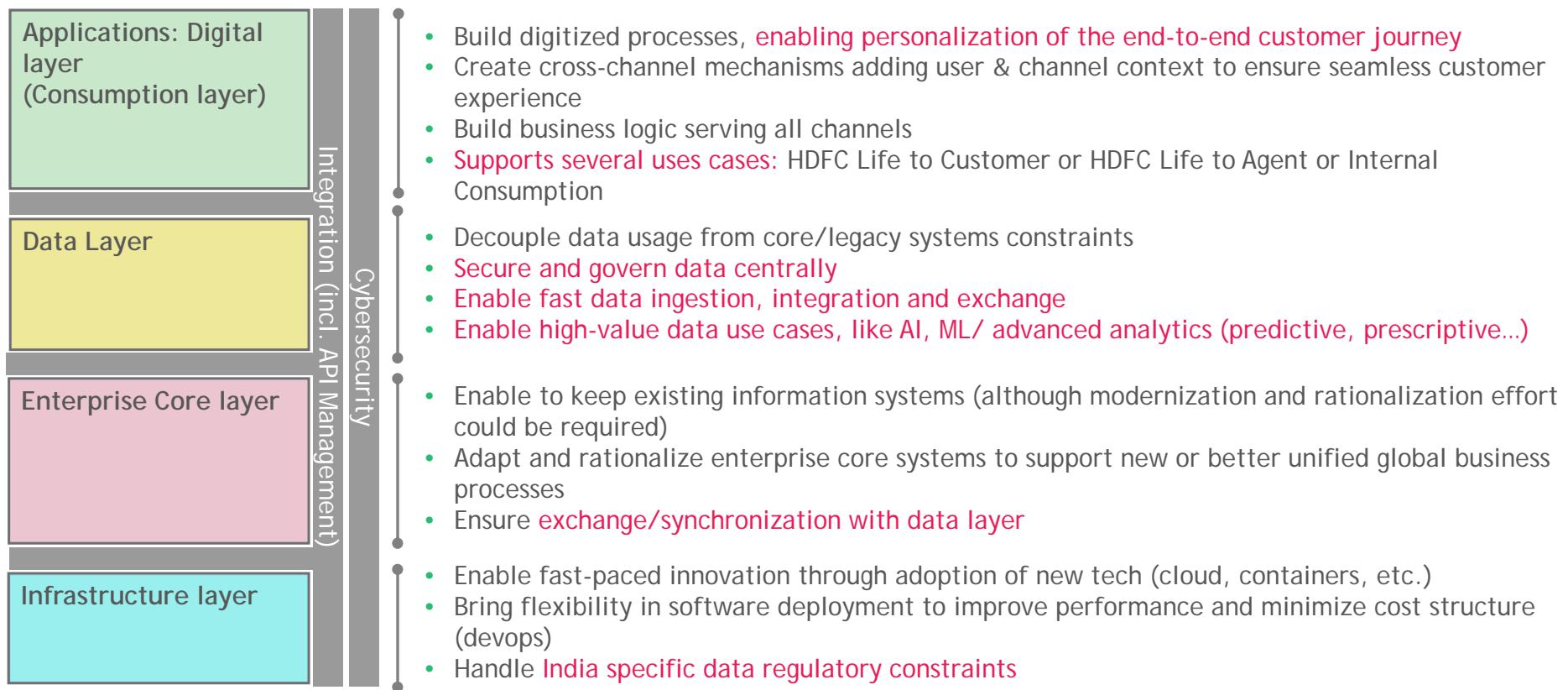


Manageable - Segregation of dev. sandboxes from production



Future proof - Use current standards technologies by default, but with flexibility for other choices if necessary

BCG has its Data Platform described using a unique reference architecture



Source: BCG

50

We leverage our expertise to design Data and Digital Platform using our new age reference architecture framework

Consumption layers

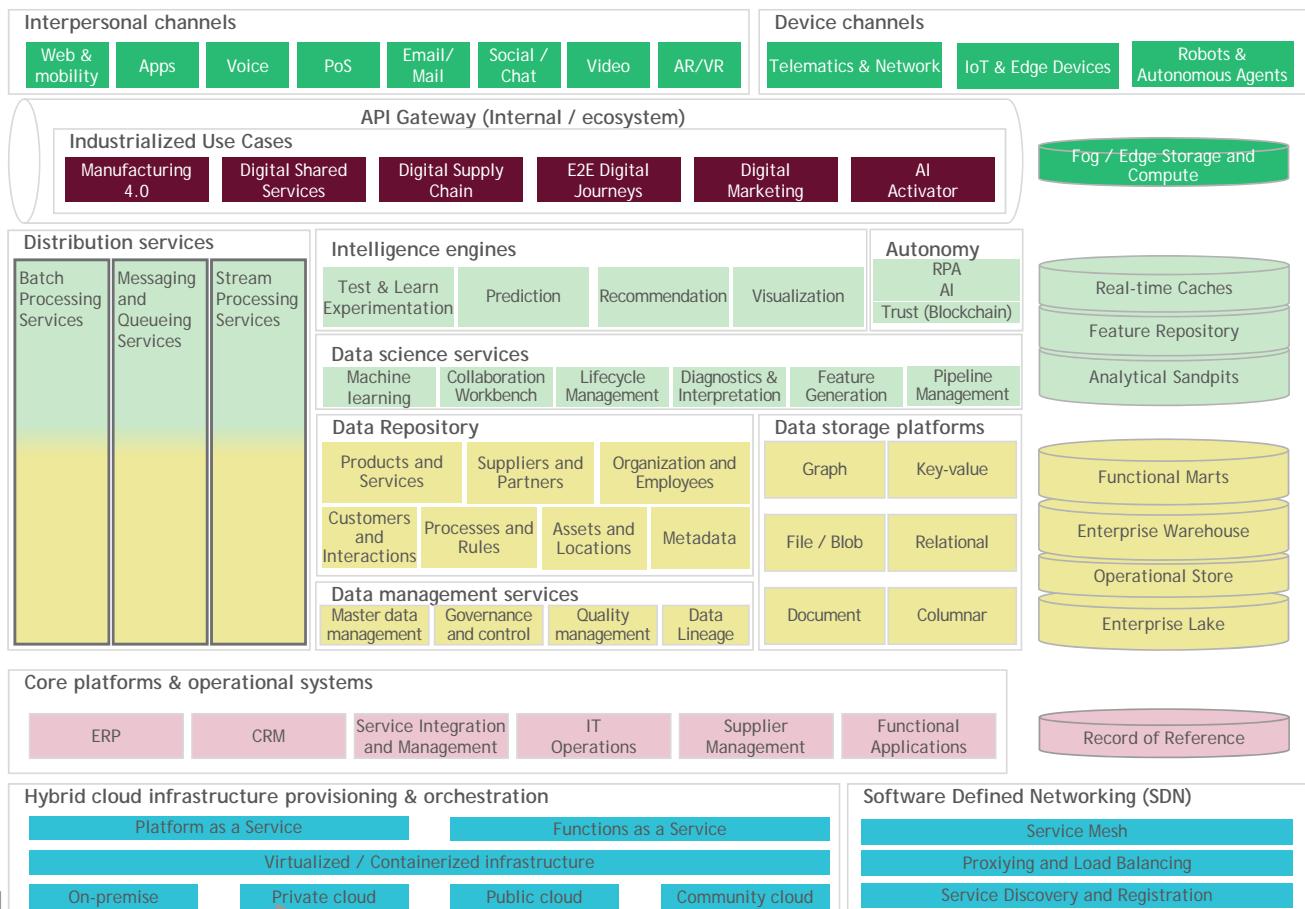
I Smart business layer: Digital

III Smart business layer: Services

III Data layer

IV Core layer

V Infrastructure layer
Multiple cloud/ Hybrid



Integration & Security



Certain components of the reference architecture are directly impacted by the data privacy law

I Smart business layer:
Digital

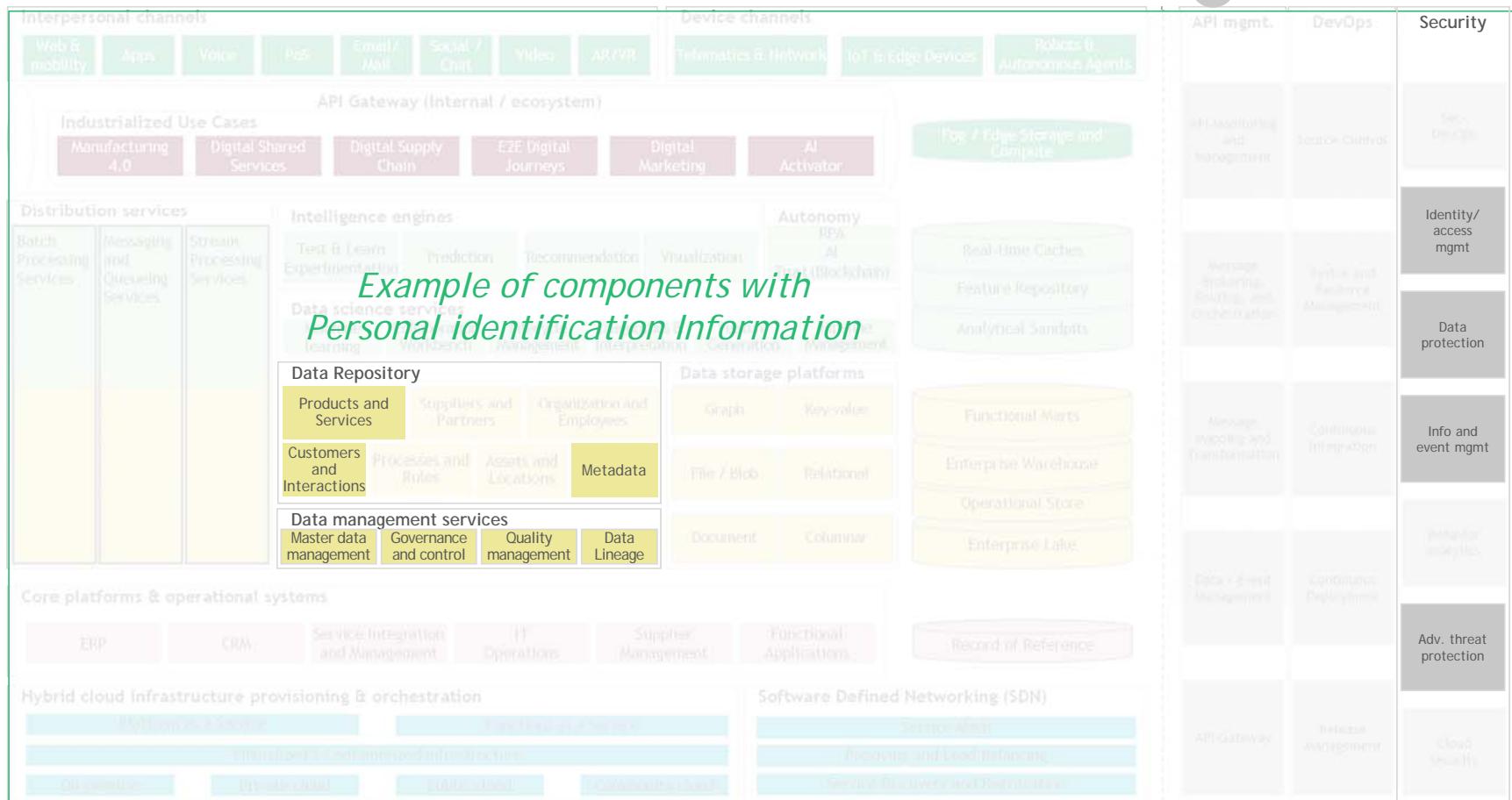
III Smart
business layer:
Services

III Data
layer

IV Core
layer

V Infrastructure
layer

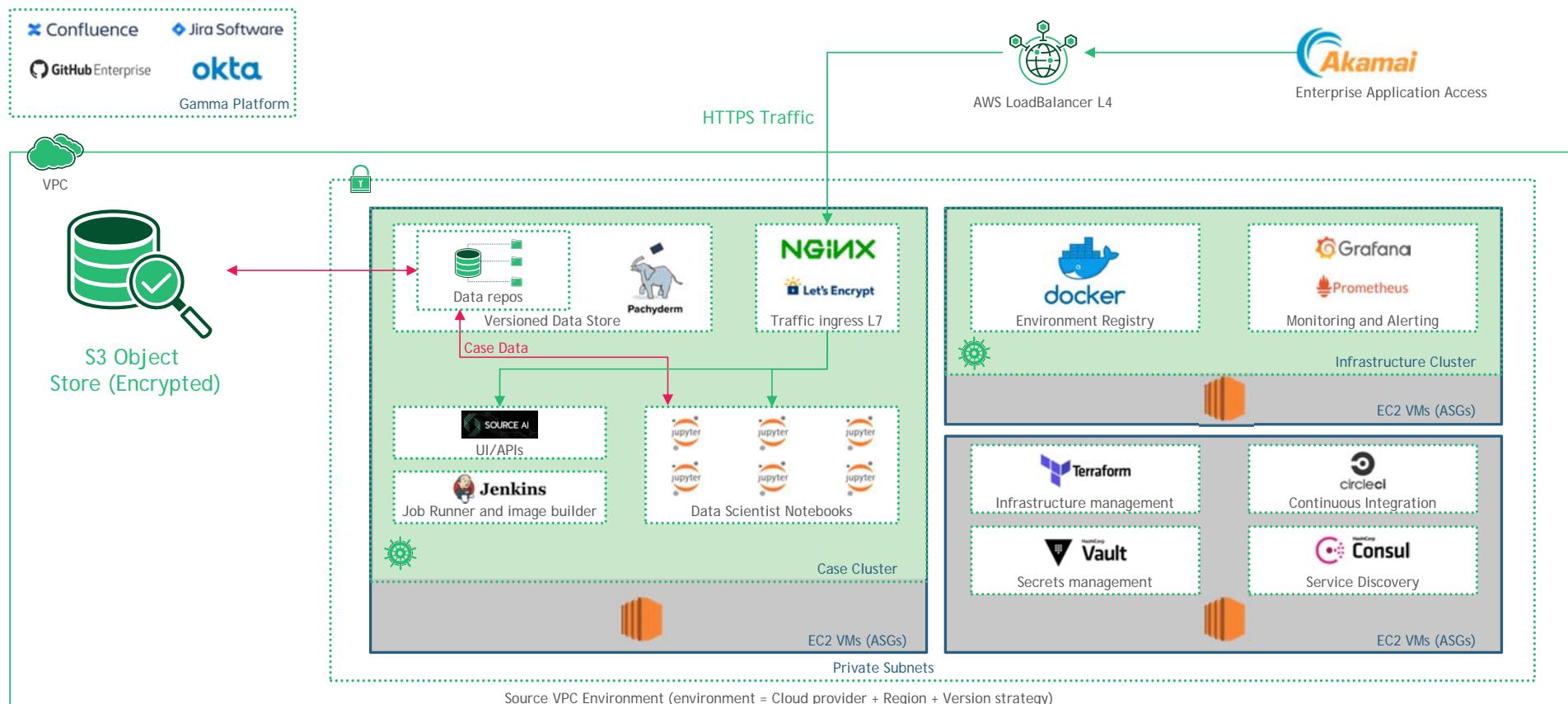
VI Integration & Security



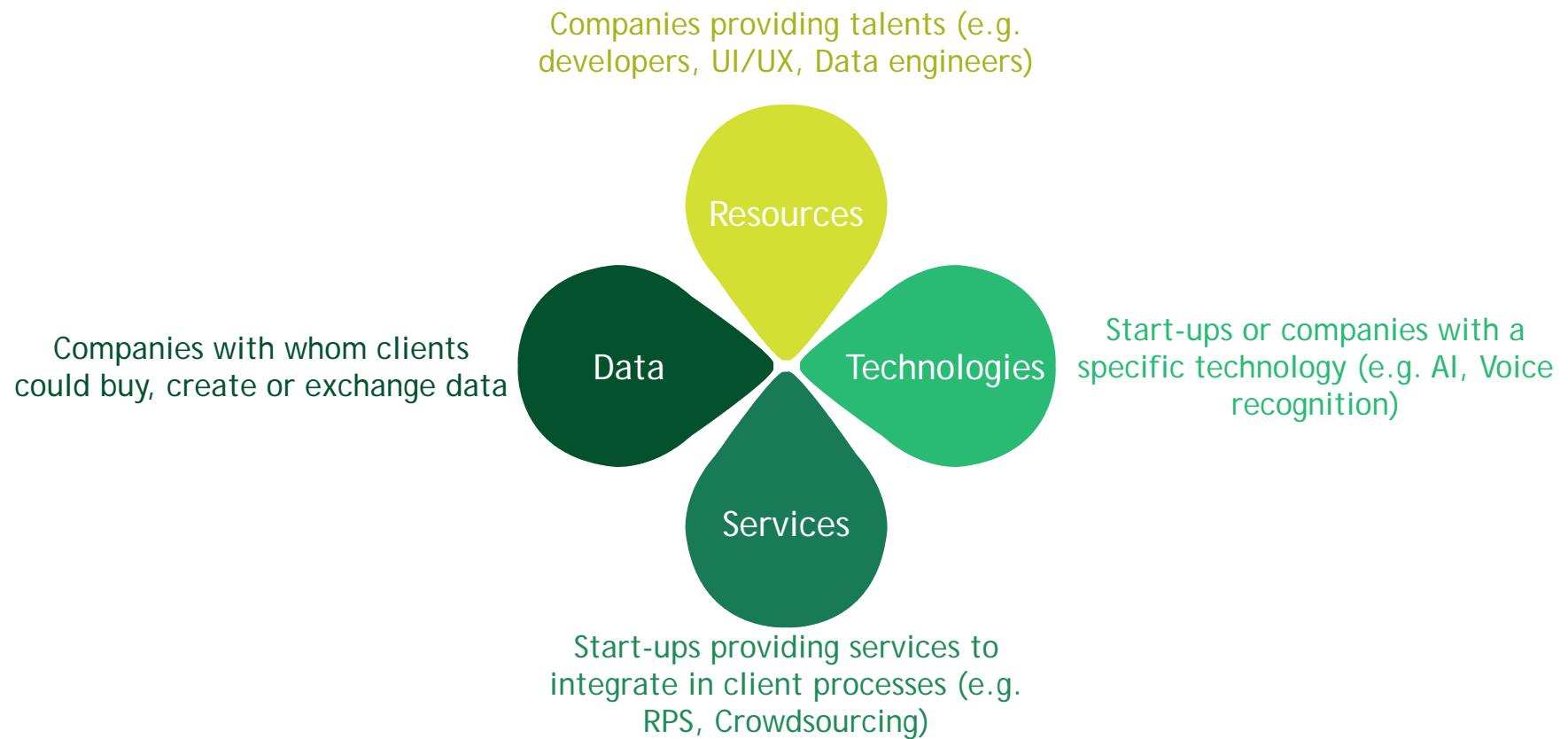
Impacted architecture components which will have to incorporate specific activities to enable compliance with privacy law

		Digital and Data Platform										
Data Privacy		Data Repository		Data management services				Security				
Stage	Activity	Customers and Interactions	Metadata	Master data management	Governance and control	Quality management	Data Lineage	Identity/ access mgmt	Data protection	Info and event mgmt	Adv. threat protection	
Find	Data discovery	Yes			Yes							
	Data inventory	Yes			Yes							
Understand	Data classification and modeling	Yes			Yes							
	Metadata management	Yes	Yes									
	Data lineage						Yes					
	Data transformation	Yes		Yes		Yes		Yes	Yes			
	Data quality management (and MDM)			Yes		Yes						
Protect	Data loss prevention								Yes	Yes	Yes	
	Perimeter protection							Yes	Yes			
	Data masking (de-identification)								Yes			
	Data encryption								Yes			
Control	Authentication and authorization							Yes				
	Audit logs and accounting				Yes							
Share	Production sharing				Yes			Yes				
	Non-prod sharing				Yes			Yes				
Manage	Information lifecycle management	Yes	Yes				Yes					
	Individual preferences inventory	Yes					Yes					
Report	Reporting and analytics (Data privacy compliance, consumer data visibility)								Yes	Yes		
	Notifications (Data breach)								Yes	Yes		

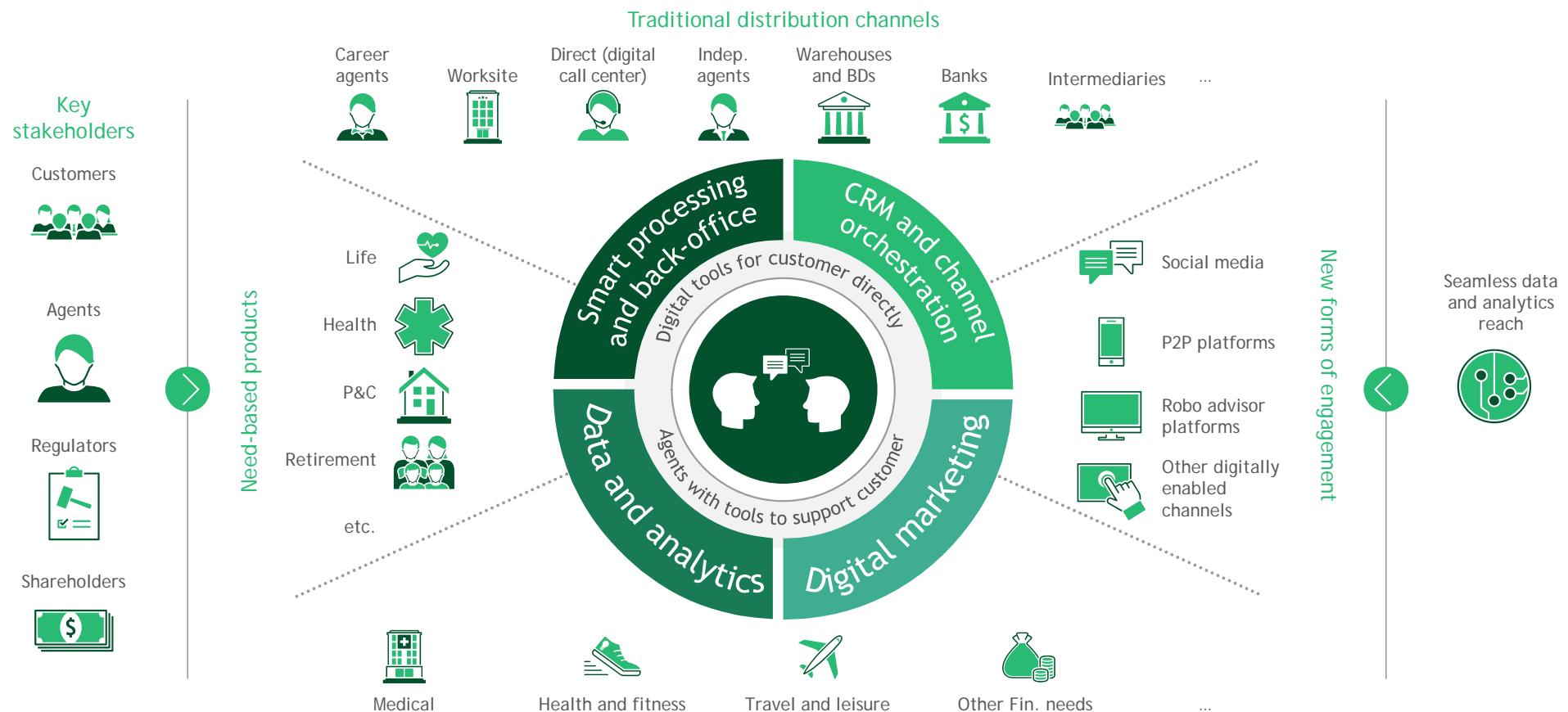
BCG's Source AI Platform supports multi-cloud strategy as components are integrated, containerized and easily accessible



We connect clients to a rich Ecosystem



What the ecosystem will look like



We will focus on end to end change management to realize the value!



Modelling

- Performance of the algorithms
- Data engineering

Data and technologies

- Data and computation platform
- Visualization and restitution tools

Processes and resources

- Data quality and availability
- Insertion in business process
- Change management

Beyond the analytics, the go-to-market engines are as critical

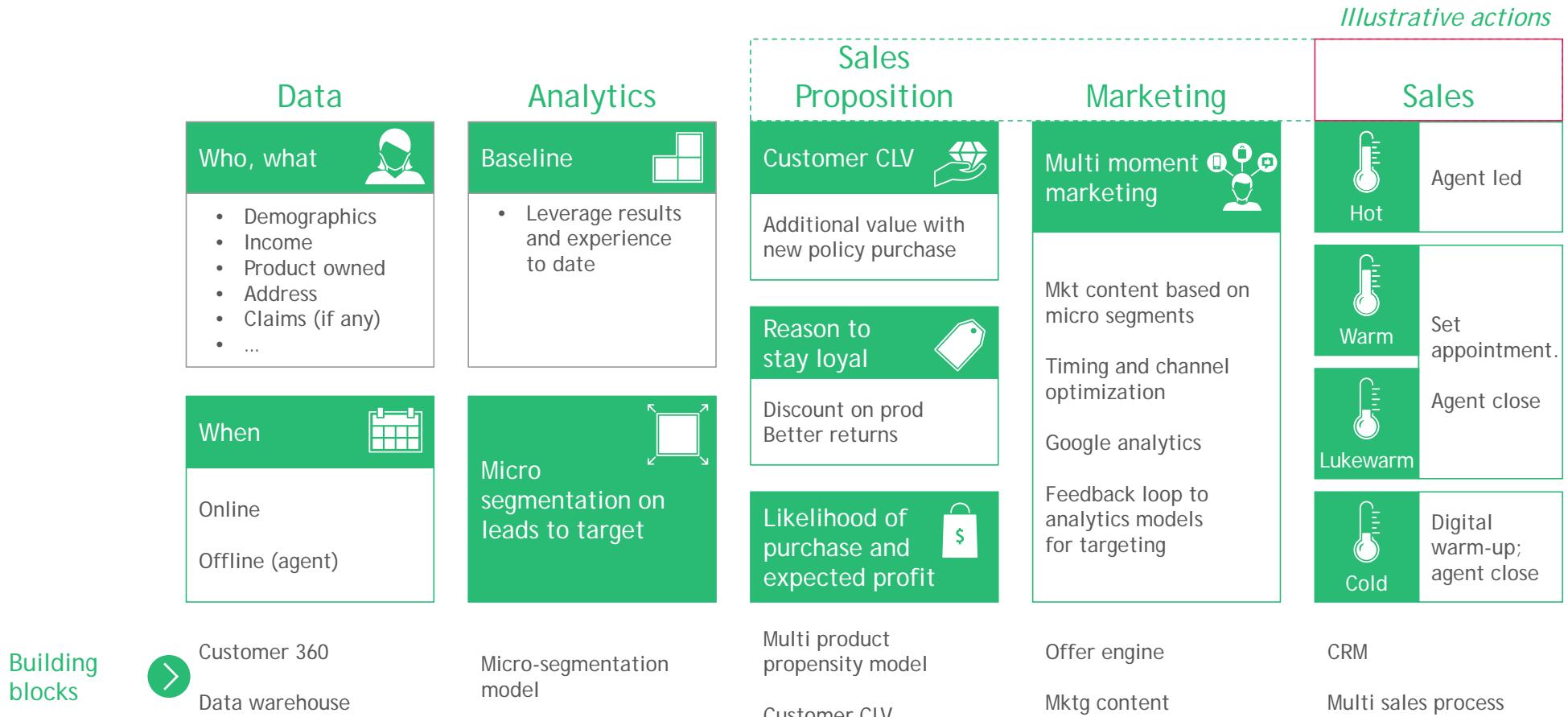
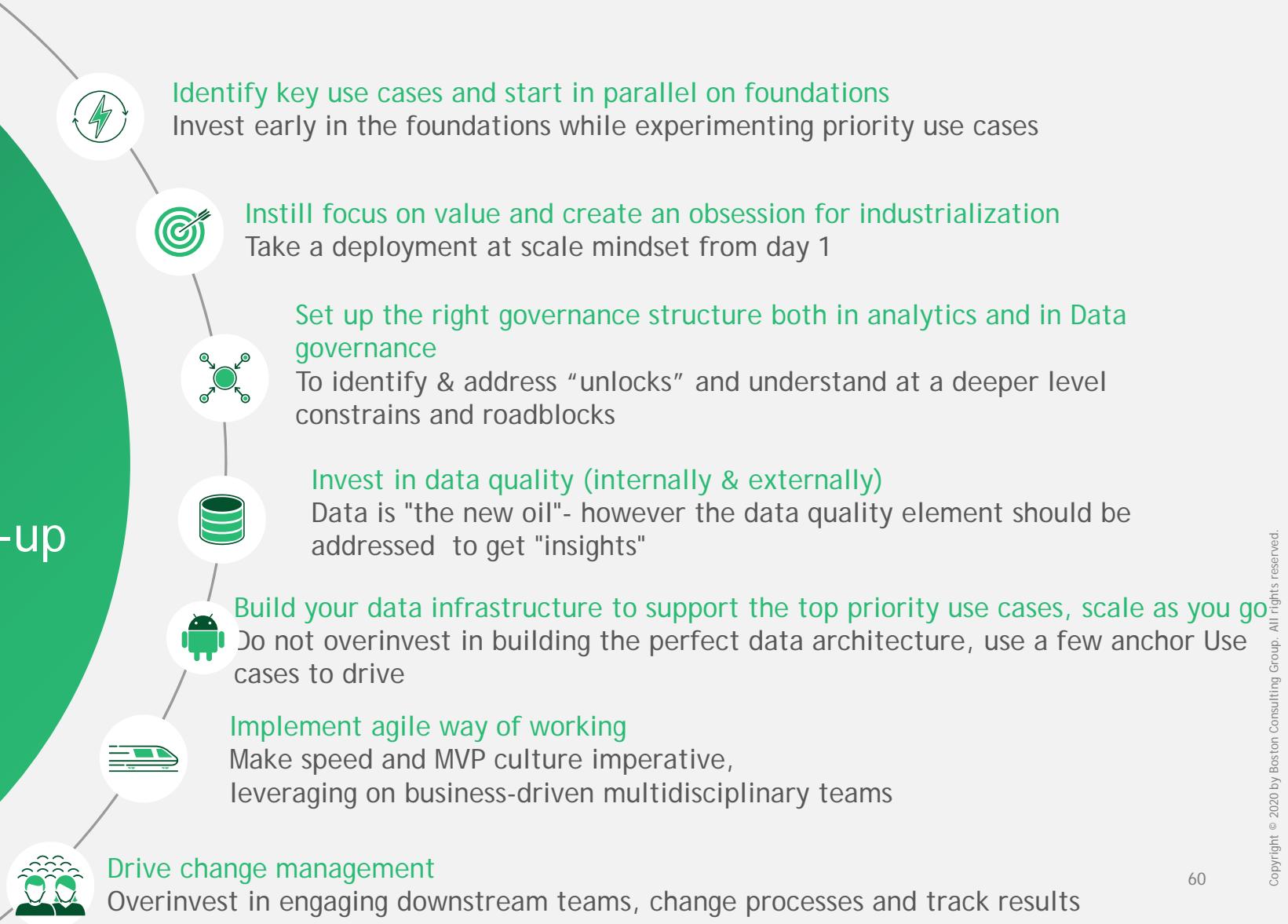


Illustration: Key interventions taken to enable call centre, field post model deployment of Banca Upsell model

Aspect	From	To
 Training and call centre agent enablement	<ul style="list-style-type: none"> No set cadence for banca trainer led trainings Only Click 2 Invest product being pitched in BAU; 	<ul style="list-style-type: none"> Onboarding training done by Banca trainer; Direct trainer on-boarded too for out of turn support Set cadence with Banca trainer for refreshers going forward, new product trainings monthly
 Data flow between call centre, central and sales teams	<ul style="list-style-type: none"> Drop off in coordination / alignment between call centre and sales team Data mapping issues - top of the funnel constrained due to missing LG codes 	<p style="text-align: center;">></p> <ul style="list-style-type: none"> Joint meeting to align on methodology login between sales team and call centre team Sales team SPOC designated Cadence of sharing performance data set
 Conversion drive	<ul style="list-style-type: none"> No reviews on monthly call centre performance MIS / metrics MET ratio at ~20% 	<ul style="list-style-type: none"> Fortnightly reviews with call centre and sales teams going forward Onboarding call done with RMs given high propensity leads Weekly dashboards rhythm set - sent to hierarchy for review

"Golden rules", which ensure a successful D&A setup and ramp-up



Agenda

Executive Summary

Case for Change

Value Based Data Transformation Methodology

➤ Our Action Biased Approach

Credentials

Why BCG

Key principles to our approach



Maximizing value

Maximizing value delivery upfront by deploying use cases, while execution continues in parallel



Business driven

Prioritizing use cases basis value, feasibility and defining architecture basis priority use cases



Proven approach

Benchmarking against best in class and building upon approach used at multiple insurers globally



Holistic

Holistic integration of business, technology along with data transformation



Effective change management

Driving last mile execution and change along with business functions



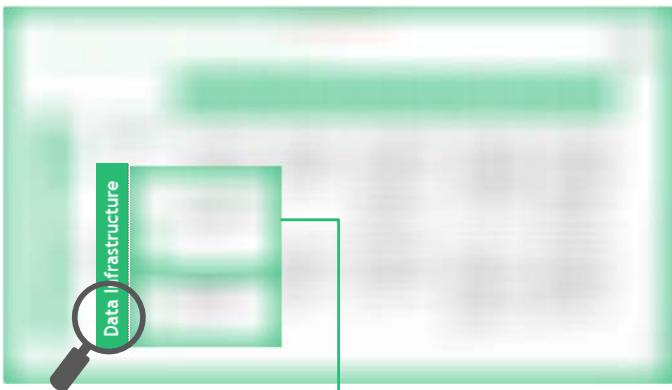
Agile

Agile way of working by delivering use cases in sprints



BCG's Data Capabilities Maturity Assessment -DACAMA is a proprietary BCG tool to assess your data maturity against a broad set of benchmarks **including India**

Structured assessment for a holistic baselining of capabilities and maturity



Capabilities described through weighted criteria



Must-have capabilities
(critical stakes)

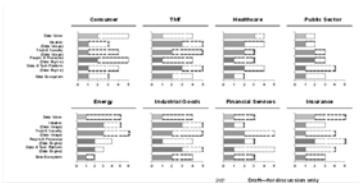


Advanced capabilities
(currently differentiating)

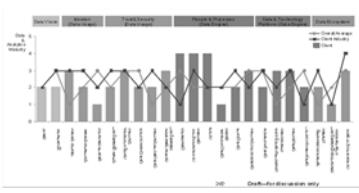


Prospective capabilities
(found in a few leaders)

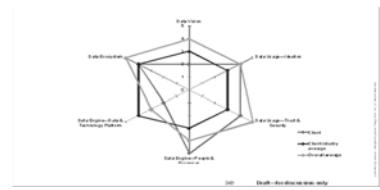
Tangible results & benchmarks



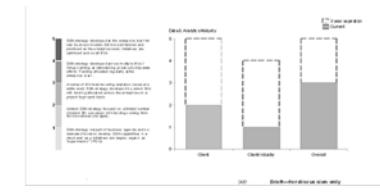
Overall trends



Detailed comparisons

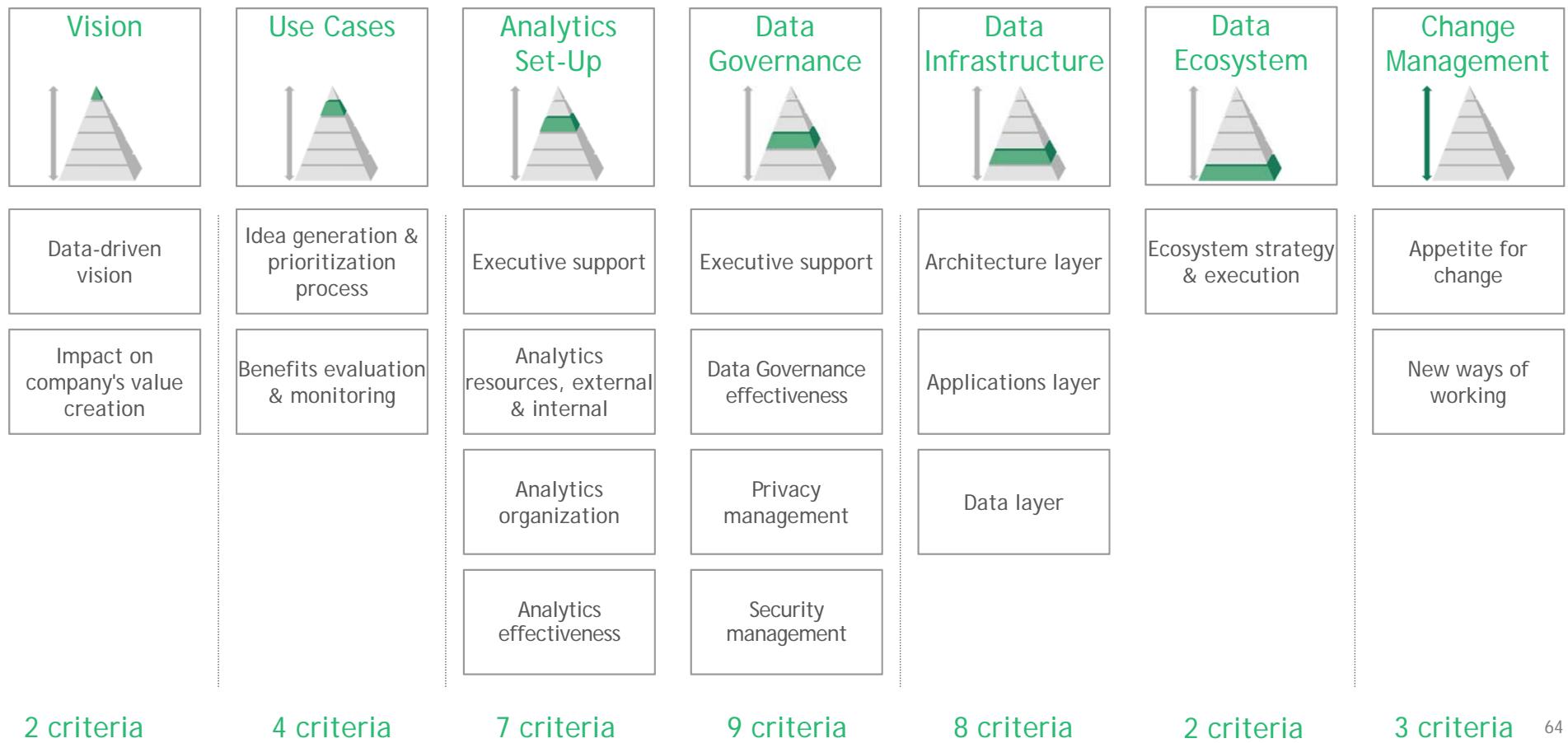


Benchmarking per topic



Detailed data points

DACAMA examines the 6+1 elements using 18 dimensions and 35 weighted criteria which helps in identifying the current as is state

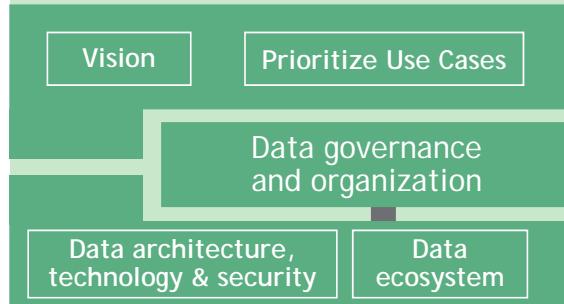


Proposed action biased approach

Develop core strategy to accelerate early business value creation, while in parallel executing effective data management and building capabilities

A Data Strategy development

Develop overall data strategy including use case definition/prioritization, change management, and roadmap



Detailed Strategy
(~8 weeks)

Develop data road map

Shift to execution

Periodic Data Strategy update

Maintain alignment of Data Strategy & execution

Data management execution

Acquire, integrate, operationalize according to Pilot results

Data acquisition Data integration Operationalization

Pilot #2 execution

Scaled Up Pilot #1

#6

#5

Scaled Up Pilot #2

Identify use case to conduct Pilot

Pilot preparation

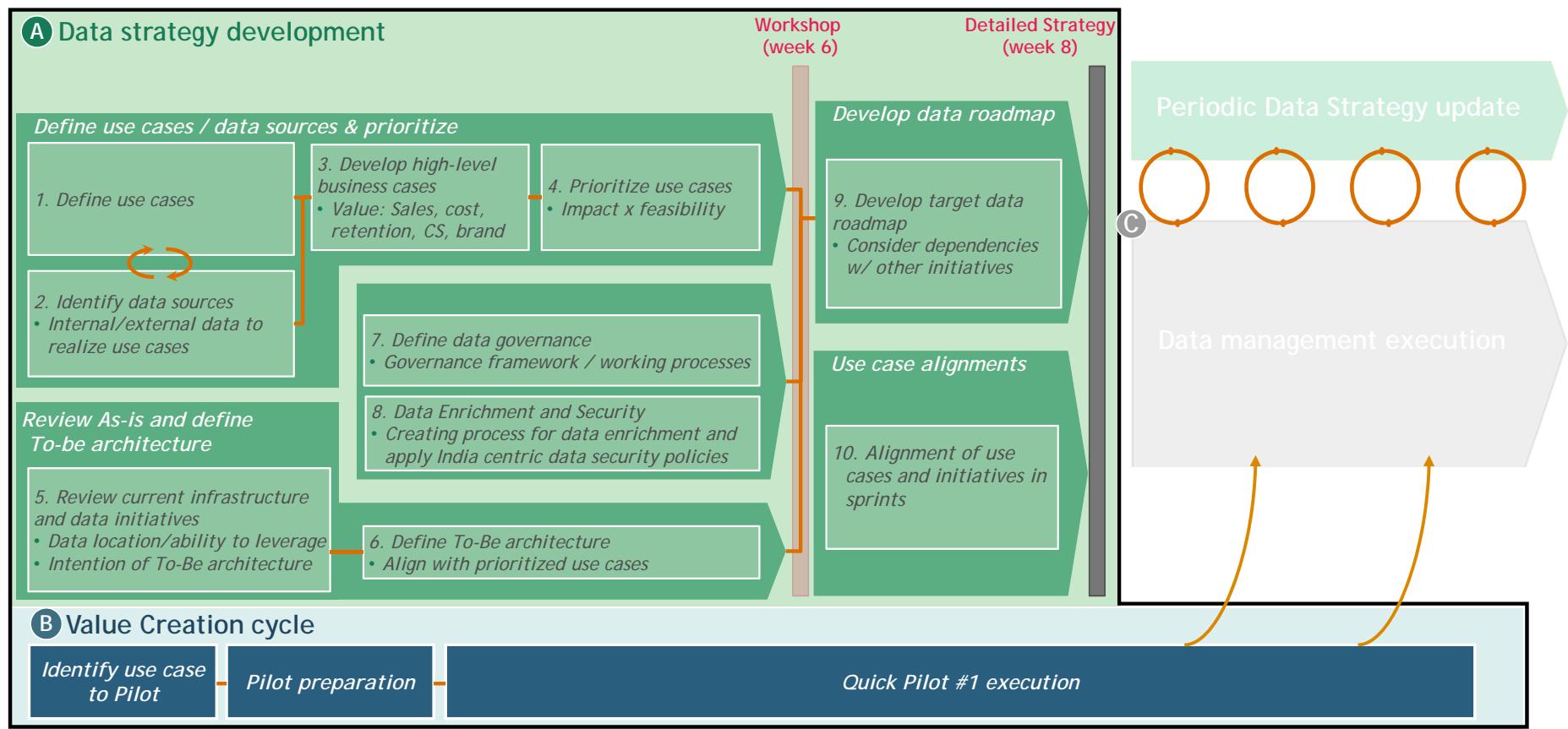
Pilot #1 execution
E.g., Upsell model with enriched dataa

B Value Creation cycle

Implementation of strategy using Agile methodology to accelerate value realization from data strategy

A Data strategy development

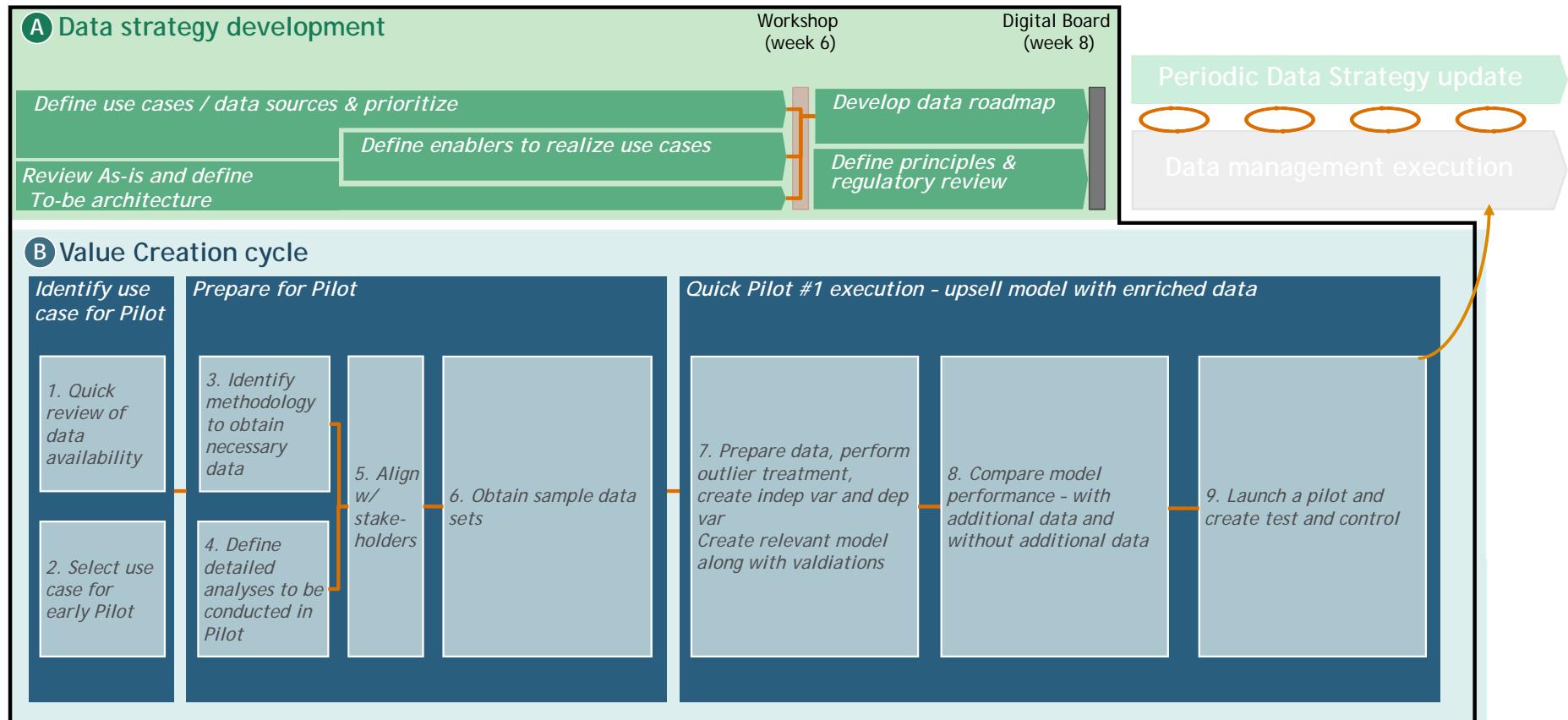
Detailed project approach: Proposed approach to develop data strategy



B Value creation cycle

Detailed project approach:

Proposed approach to accelerate business value delivery and realize quick wins in an agile manner



A Key deliverables for strategy and roadmap phase

Approach and key action items		Key deliverables	<i>Deliverables for other phases of implementation can be shared on request basis exact scope of work</i>
Overall benchmarking	Maturity assessment through DACAMA	Benchmarking across key areas - use cases, architecture, governance, ecosystem, change management vs. best in class insurers to identify priority areas for improvement	
Define use cases / data sources & prioritize	Define use cases	List of use cases to realize value <ul style="list-style-type: none"> Supplement the list of use case indicated by HDFC Life based on the past and from BCG repository 	
	Prioritize use cases	Define priority for implementation based on the feasibility and impact <ul style="list-style-type: none"> Conduct workshops with relevant functions and build consensus Details of each use cases including business owner, timelines, sprint wise deliverables etc. 	
	Identify data sources	Source of data identified from key use cases and evaluate feasibility of data acquisition <ul style="list-style-type: none"> Identify internal, partner data sources 	
Review As-is and define To-be architecture	Maturity assessment: DACAMA benchmarking	Benchmark across key capabilities vs. best in class insurers globally <ul style="list-style-type: none"> Synthesise key focus areas basis benchmarking results 	
	Review current infrastructure and data initiatives	Baseline of current data architecture and identified constraints for achieving key use cases <ul style="list-style-type: none"> Identify items needed to use internal data and to coordinate internal/external data Baselining of skills, capabilities, architecture, governance, tools etc. Baselining processes for cataloguing and accessing data, develop reports on challenges around data ecosystem 	
	Target architecture, op model	Optimal data architecture which addresses gaps across People, Process, Governance, Architecture, Security, Technology <ul style="list-style-type: none"> Develop target architecture, taking into account priority of use case and required resource/time frame 	
	Technology blueprint	Technology blueprint including architecture, integrations, technologies and tools <ul style="list-style-type: none"> Identify vendor requirements, develop onboarding plan 	
Develop Data Roadmap	Roadmap	Implementation road map by considering priority of use case/timing of governance, etc. <ul style="list-style-type: none"> Identify dependencies and map stakeholders for implementation Establish a framework to meet the governance of digital innovation 	
	Implementation plan	Plan of implementation across architecture, technology, resourcing , governance <ul style="list-style-type: none"> Refine resource plan and key roles for governance Elaborate skill set/timing of recruiting, etc. based on the priority/contents of use case Lay out overall plan and milestones for implementation 	68

Agenda

Executive Summary

Case for change

Value based Data Transformation Methodology

Our action oriented approach

➤ Credentials

Why BCG

BCG has delivered 850+ Data Analytics Transformation across industries including 45 in Insurance



Data Analytics
Transformation

Data Analytics
Transformation in
Insurance

Data Analytics
Transformation in
Financial services

References available
on request

Includes projects focused on Data Strategy and Transformation
Excludes projects where analytics use case deployment was a part of overall project E.g. Upsell in BancaWon

We have delivered high impact across clients

Japanese life insurer	Data & Analytics strategy development, use case prioritization, execution, architecture transformation	1.4x Claim through digital	French savings & protection insurer	Enabling data & digital transformation at scale through platforms and operating models	€10M 2.5x fraud detection +20% hit ratio on lead +170% price realization uplift
Canadian life insurer	Deeper consumer relationships through customer analytics- across strategy, data driven, API enabled platform deployment	2.5x Conversion improvement	Indian insurer	Analytics program spanning across enrichment, partnerships, use cases, channel execution	24 Mn Additional customers in funnel 4X Cross sell potential
Swiss reinsurer	New business opportunities, strategy, holistic architecture for digital/ data-driven business models	>€1 Bn New revenue potential identified	American Insurer	Advanced data & analytics capabilities set up (talent, tools, and systems)	\$1B Savings
British Insurer	Simplification/migration of architecture through analytics	50% Additional cost reduction vs, budget	Italian insurer	Architecture transformation, use case development	75% Accurate classification of mails

We have categorized our experience across 5 key elements ahead



Data strategy

Overall strategy for data transformation in the company and developing a roadmap. Includes strategy for items below- Use cases, analytics set up, data governance, organization, architecture, technology and security etc.



Use cases

Analytics model deployment for specific use cases and deployment E.g. Cross sell, churn reduction



Data and analytics setup

Design and institutionalization of data and analytics related processes E.g. Analytics centre of excellence set up



Data governance and org

Set up of right governance structure and processes. Includes range of activities E.g. Identifying key roles, resources, analytics org design, setting data access rights



Data architecture, technology and security

Design of target data architecture / technology with action items including target architecture definition, choice of build vs. buy, onboarding SI vendor, deploying right set of technologies and techniques (AI/ ML), deployment of tools (visualization/ data access)

We have significant experience in Data Strategy, Architecture, and Governance across companies- Life Insurance examples

[Select examples](#)

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 Aflac	✓	✓	✓	✓	✓
 Manulife Financial Corp	✓	✓	✓	✓	✓
 Mass Mutual Life	✓	✓	✓	✓	✓
 Nationwide Insurance	✓	✓			
 New York Life					✓
 Northwestern Mutual Life				✓	✓
 Royal London Group	✓	✓			✓

We have significant experience in Data Strategy, Architecture, and Governance across companies- Health focused Insurance examples

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 Malakoff-Mederic	✓	✓	✓	✓	✓
 Dak	✓				✓
 Ergo Group-Ergo-Corporate	✓			✓	✓
 Ergo Group-Ergo-Sonstige/It					✓
 Humana Inc			✓	✓	
 Cigna	✓	✓	✓	✓	✓

We have significant experience in Data Strategy, Architecture, and Governance across companies- General Insurance examples (I/III)

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
Allianz - Allianz - Corporate	✓				
AOK - Aok - Aok Rheinland-Pfalz		✓			
AOK - Aok - Aok Sachsen-Anhalt					
ANIA - Assoc Nazionale Fra Le Imprese Assicuratrici		✓			
AXIS - Axis Capital				✓	
FIDELIDADE - Fidelidade		✓	✓		
First American Corp	✓	✓			
Generali Group - Generali					✓
Gothaer Finanzholding Ag - Krankenversicherung Ag	✓	✓			
Grupo Universal - Seguros Universal	✓				

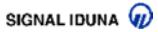
We have significant experience in Data Strategy, Architecture, and Governance across companies- General Insurance examples (II/III)

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 Health Care Service Corporation (Hcsc) - Health Care Service Corporation	✓				
 Hyperion Insurance Group		✓	✓	✓	✓
 ICICI Lombard	✓	✓			
 Lansforsakringar Ab		✓			
 Munich Re - Muenchener Rueck It	✓				
 Mutua Madrilena - Segurcaixa Adeslas			✓	✓	
 Nurnberger Versicherungsgruppe					✓
 Pension Insurance Corporation (PIC)	✓	✓	✓	✓	✓
 Priority Health	✓				

We have significant experience in Data Strategy, Architecture, and Governance across companies- General Insurance examples (III/III)

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 RSA Insurance Group - Codan	✓				✓
 SIGNAL IDUNA Gruppe		✓			
 Swiss Re Group - Corporate Solutions Division	✓				
 Swiss Re Group - Schweizer Rueckvers	✓			✓	✓
 talanx Ag - Corporate		✓			
 Tokio Marine & Fire	✓				
 UWV - Gak	✓				✓
 Wuestenrot & Wuertembergische - Corporate	✓				
 Wuestenrot & Wuertembergische - Personenversicher	✓	✓	✓	✓	✓

We have significant experience in Data Strategy, Architecture, and Governance across companies- Global Financial services examples (I/II)

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 ANZ Bank		✓	✓		
 APG Asset Management		✓			
 American express company	✓	✓		✓	
 AXA SA - Kamet		✓			
 ABN AMRO		✓		✓	
 Axis Bank	✓	✓	✓	✓	✓
 Banco Bilbao Vizcaya Argentaria		✓			
 Bundesanstalt Fur Finanzdienstleistungsaufsicht		✓			
 BNP Paribas	✓	✓	✓	✓	✓
 Bank of Montreal		✓	✓		

We have significant experience in Data Strategy, Architecture, and Governance across companies- Top Global Financial services examples (II/II)

Select examples

Client name	Data strategy	Use case	Data and analytics setup	Data governance and org	Data architecture, technology and security
 Citigroup					
 Hyundai Card					
 ING group					
 Lloyds Banking Group - Scottish Widows F&L					
 Russian standard bank					
 Banco santander					
 Sumitomo Mitsui Financial Group, Inc					
 Temasek Holdings Limited					

Agenda

Executive Summary

Case for change

Value based Data Transformation Methodology

Our action oriented approach

Credentials

➤ Why BCG

BCG is the right partner for you in this critical transformation

- 1 We know HDFC Life - its business, culture, personnel and hence we can maximize value unlock
 - We have worked closely with HDFC Life on some of its key programs over the past nine years - including growing all channels (**banca, direct, agency, digital**) and departments (**operations, underwriting**)
 - We believe we have a strong understanding of your business, strategies and culture
 - Hence we have the ability to draw out linkages to your business and unlock value from data analytics
- 2 Proven track record in data transformation
 - We bring a wealth of data transformation experience with **strategic, value creating focus**
 - Executed **850+ data analytics transformation cases globally** with 45 projects in Insurance, additional 95 with banks and other financial services covering data strategy, governance which have delivered significant topline and bottom line impact
- 3 Specialized, full stack team on data, analytics and technology
 - We have specialized and dedicated team of **800+ practitioners globally and 200+ in India**
 - Team consists of Data Architects, Data Engineers, Data & Analytics Translators, Data Scientists, UI/ UX
- 4 Combine best of core insurance knowledge, data and technology
 - We will **deploy the "right" mix of team** to combine the best of core insurance experience, deep analytical content knowledge and technology capabilities to unlock value of data and analytics
 - **Best in class technologies and tools** for the right outcomes E.g. AI, ML advanced techniques
- 5 We are the top-rated firm in change management
 - We have been **pioneers in change management** and understand the importance of both the hard and the soft sides of change
 - In a project like this, it is not just important to implement the "hard" stuff, but to drive the change to use the data and insights in the right manner, at the right time - **we will help you drive that change**
- 6 Collaborative, Action based approach; Institutionalize capabilities
 - We will push the boundaries to ensure we bring the best of cutting edge thinking combined with realities in India to the transformation
 - As across all our projects, we will **work closely with your team to design and implement at a rapid pace and institutionalize capabilities** to enable the team to take it forward

We know HDFC Life—9+ years of association; Deep know how of business, culture, teams

We have worked across channels and departments at HDFC Life

BancaWON

Banca & Direct: Winning in Open Architecture for 9 months

- Built platform for faster and more rigorous growth of bancassurance channel
- Direct Life strategy and roadmap for productivity improvement
- Analytics deployment for Upsell, SP segmentation
- Login to issuance journey re-imagination

Digital

Digital: Growth and partnership strategy

- HDFC Life assets: Website
- Aggregators
- Partnerships



Agency: Transformation of agency channel for 15 months

- Built platform for fast growth of agency channel, enabled by digital
- Analytics deployment for agent recruitment, micro markets



Sales force effectiveness and channel strategy

- Banca
- Direct
- Broca



Merger planning for 9 months

- Worked with all departments of the company (eg: distribution, ops, finance, HR etc.)

International Strategy

International market entry strategy

- Gulf region entry

2

Proven track record

BCG has delivered 850+ Data Analytics Transformation across industries including 45 projects of Insurance

References available
on request



Consumer



Energy



Financial Institutions



Healthcare



Industrial Goods



Insurance



Private Equity



Public Sector



TMT

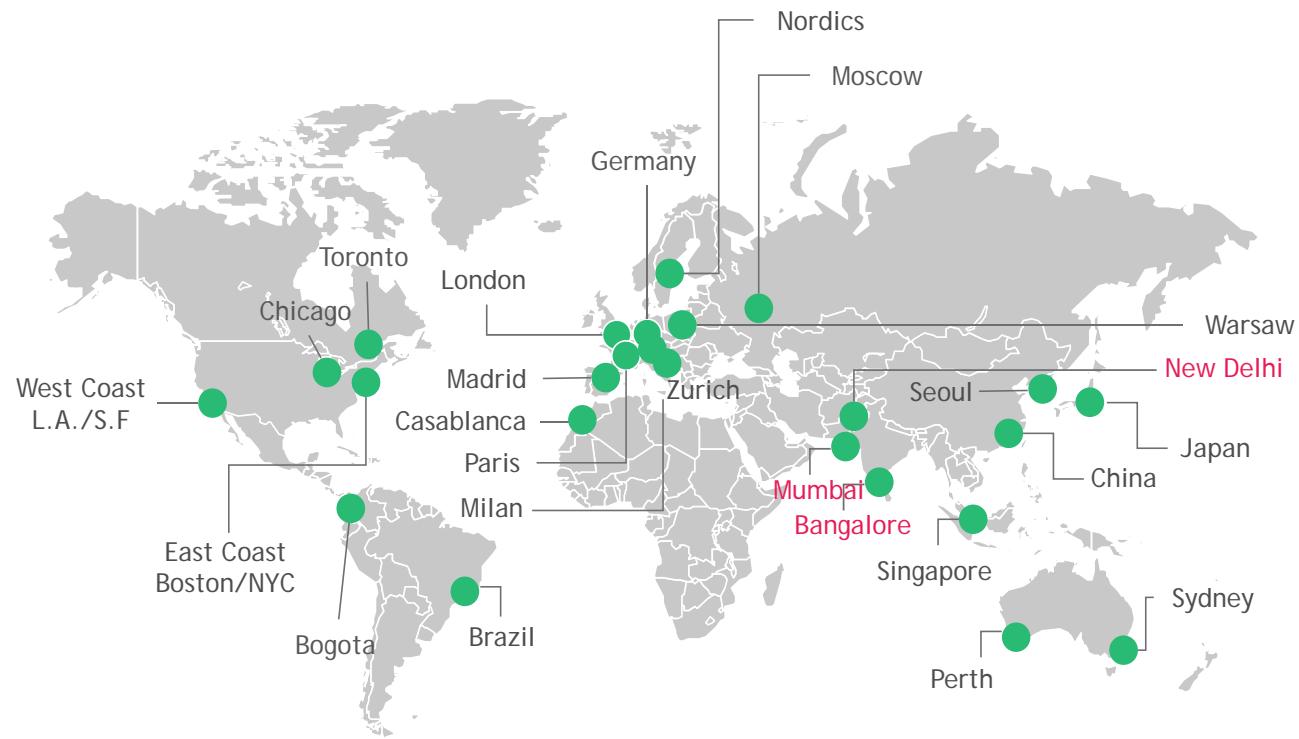


TOTAL

Includes end to end Data Analytics Transformation

Does not include cases where analytics was just a module or cases where only few use cases were delivered

Worldwide 800+ analytics practitioners across 24 locations (~200 in India)



Data Science

- Descriptive
- Predictive
- Prescriptive

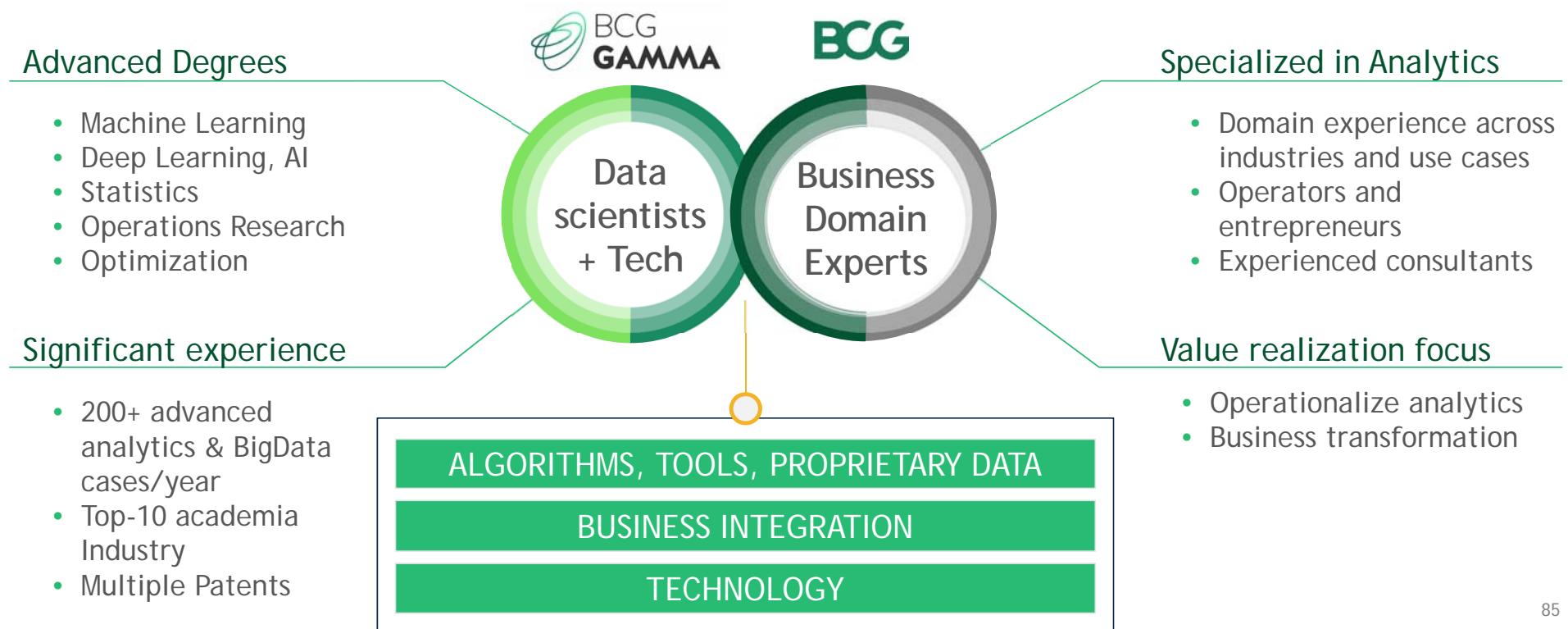
Topic/industry expertise

- Customer relation
- Marketing
- Networks
- Operations
- Risk

On shore/Off shore teams

- Data scientists
- Data engineers
- Developers (UI, tools)
- Trainers

BCG helps unlock the value of data & advanced analytics with world class data scientists and unmatched business consulting skills



Team members come from BCG's full spectrum of core and digital businesses



BOSTON
CONSULTING
GROUP



DIGITALBCG



Product owner

- Core insurance expertise
- Mobilizes business users and leads change management for use cases
- Has transversal view of business issues
- Designs and implements end to end use cases to unlock value



Business Analyst

- Anchors use cases and value realization
- Has detailed knowledge of the Life Insurance use cases
- Act as bridge between Business, and Data & Analytics teams



BCG
GAMMA



BCG
Digital
Ventures



TECHNOLOGY
ADVANTAGE



BCG
PLATINION



Venture architect

- Lays roadmap for data architecture target state
- Experience in start-up environments on how to scale new age platforms



Data scientist

- Excellent knowledge of modern analytical approaches and tools
- Experience in building machine learning models and complex algorithms



Data engineer

- Has good understanding of data systems and repositories
- Builds and maintains “pipes” to data sources to enable data science teams analysis
- Transforms raw data into usable tables based on schema developed in conjunction with Data Scientists



Agile project manager and Coach

- Experience in project management in short cycles (e.g., black belt)
- Capacity to anticipate problems and de-bottleneck issues
- Work with SI partners to ensure Agile delivery



Software developer/ Model Implementers

- Excellent coding skills ensuring models can efficiently be deployed globally
- Ensures tech choices made by Data team is synched with the best of the IT environment

We have managed Systems Integrators with an **unbiased** approach

[Select Examples](#)

Traditional Sls



We also have deep relationships with all of the large system integrators in India and globally

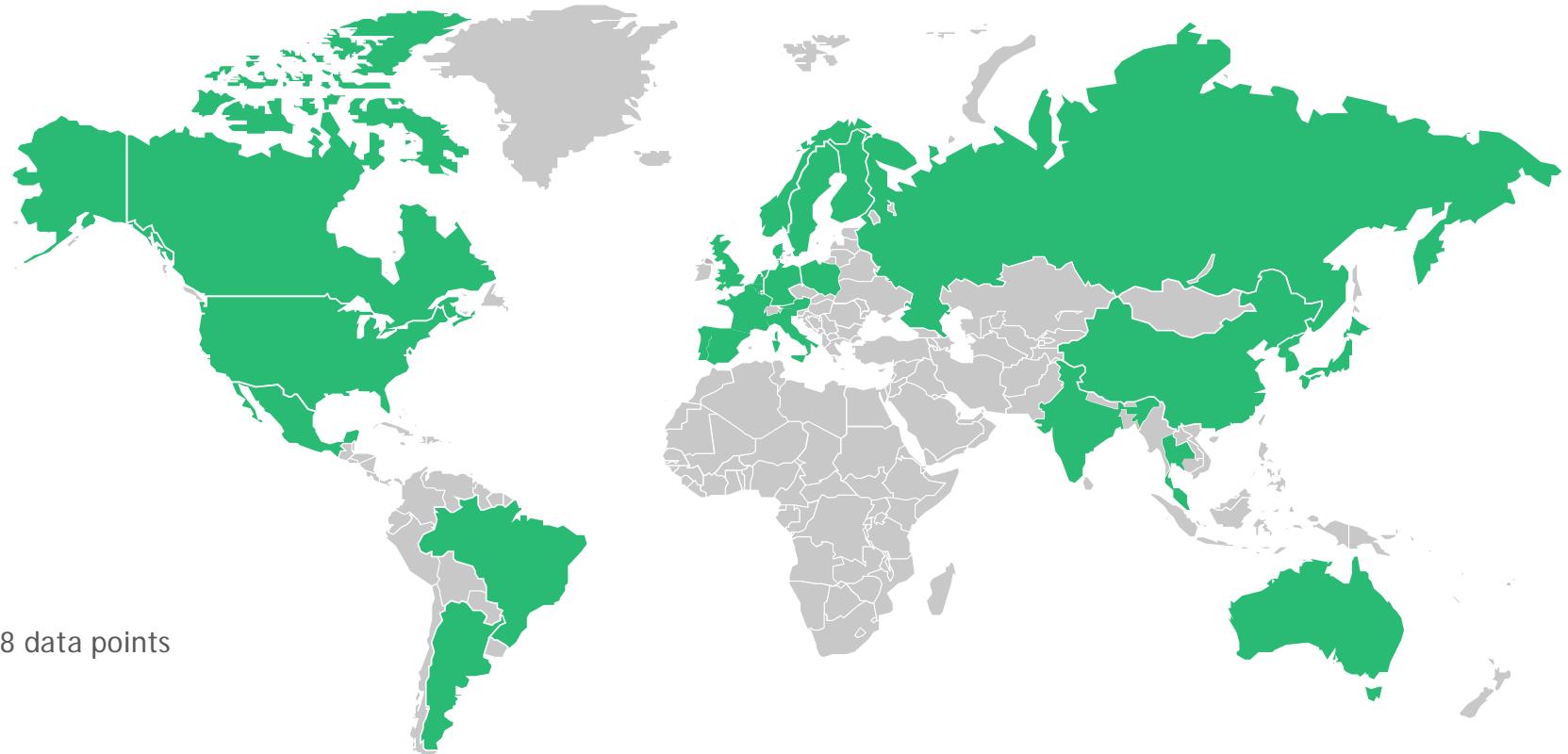
India



Global



We have benchmarks for >600 companies across all industries, geographies and sizes using our Value based Data Strategy framework;
36 companies in Insurance covered



We are the top-rated firm in change management- we ensure value realization by driving change

Executive Certainty

- Portfolio approach to initiative management
- Transparency across milestones and outcomes
- Rigorous methodologies and tools, testing of initiatives
- Forward-looking view into emerging issues



Enabled Leaders

- Leaders deeply accountable for success
- Leaders able to effectively sponsor and manage the change
- Alignment of leaders is palpable, visible and maintained - "One Voice"

Governance & PMO

- Clear governance structure with explicit roles, processes and decision rights
- Value-added PMO provides essential support structure to the organization

Engaged Organization

- Employees at every level understand the change and are equipped to manage it
- Critical stakeholders are deeply engaged
- Essential behaviors are reinforced
- Accountability is hard-wired in line management metrics, performance management and recognition systems

BCG brings capabilities, wide experience, approach to create lasting assets and drive change

A full set of capabilities



An End to end approach to create lasting assets



A series of high impact experiences

Delivering high impact	
Japanese life insurer	Data & Analytics strategy development, use case prioritization, execution, architecture transformation \$30 Mn Annual Savings
Canadian life insurer	Deeper consumer relationships through customer analytics- across strategy, data driven, API enabled platform deployment 50% Cross sell uplift 10% Churn reduction
Swiss reinsurer	New business opportunities, strategy, holistic architecture for digital/ data-driven business models 1.3x Cross sell uplift
British insurer	Simplification/migration of architecture through analytics 8x Improvement in migration time
French savings & protection insurer	Enabling data & digital transformation at scale through platforms and operating models €10M 2.5x faster resolution +20% hit ratio on lead +170% price realization uplift
Indian insurer	Analytics program spanning across enrichment, partnerships, use cases, channel execution 24 Mn Additional customers in funnel 4X Cross sell potential
American Insurer	Advanced data & analytics capabilities set up (talent, tools, and systems) \$1B Savings
Italian insurer	Architecture transformation, use case development 75% Accurate classification of mails

Capability building & change management

Enabling last mile execution & program management

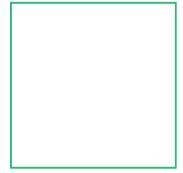


Delivering value from day 1



Client references

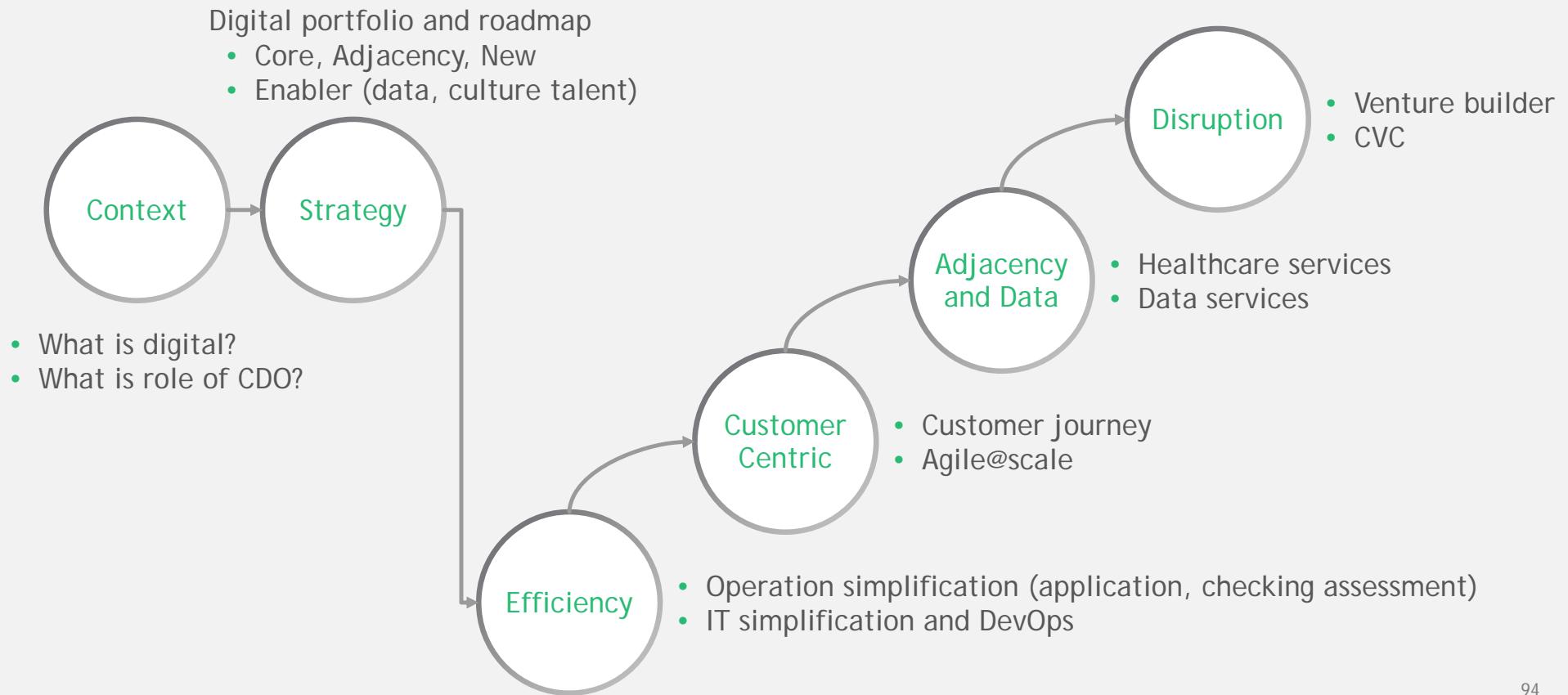
We are open to organizing discussions with our existing and previous clients on request



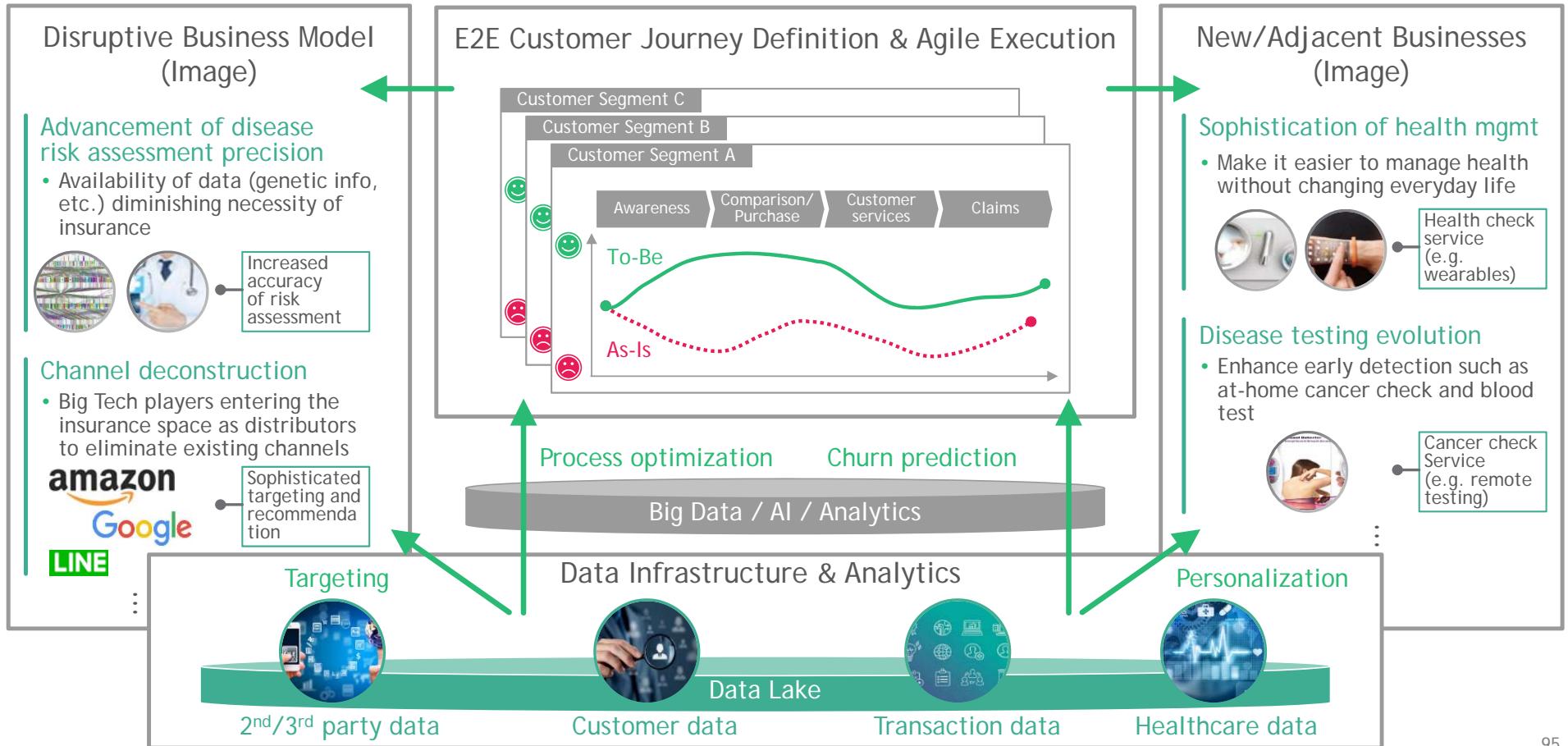
Vignettes

Example 1: Asian Insurer

Core topics we are supporting the client on



Data infrastructure supporting business model and adjacencies

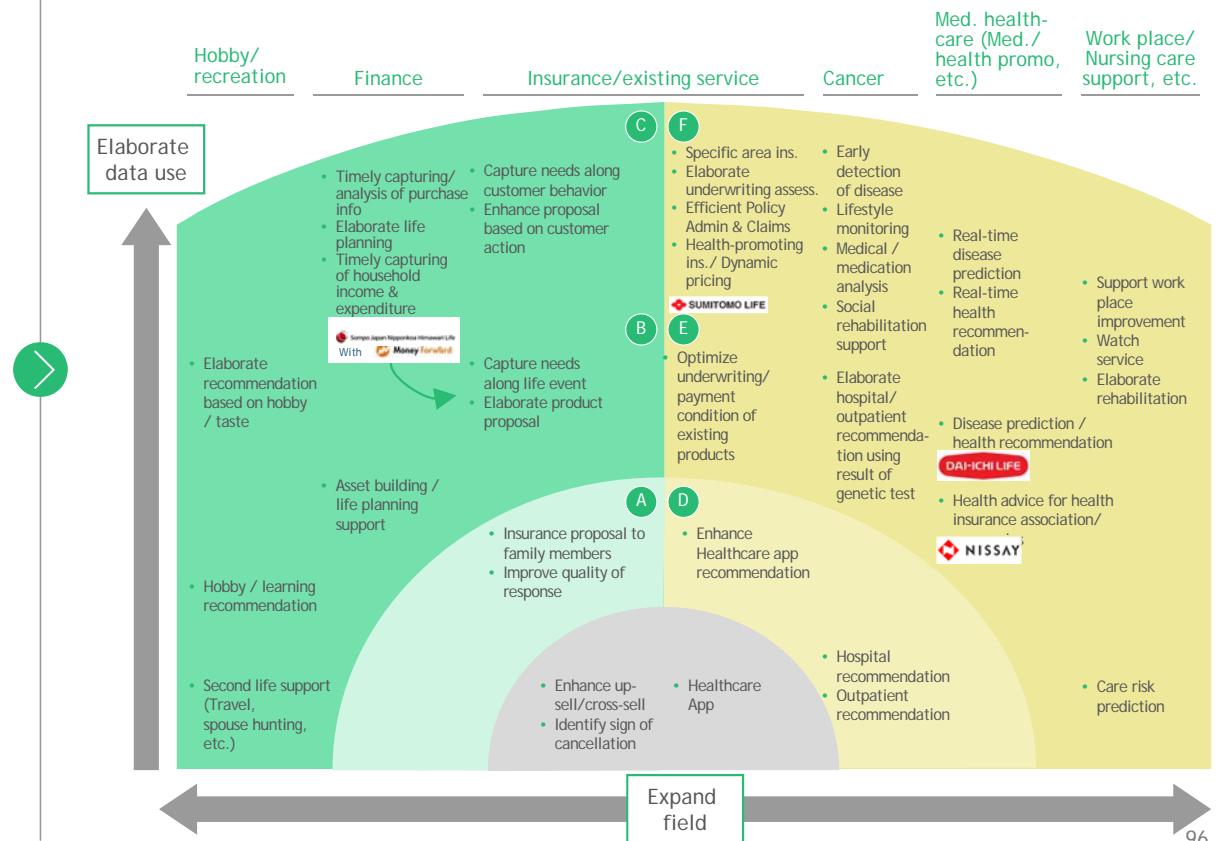


Data Ecosystem development: Managing customers beyond insurance

Candidate data set for acquiring/organizing, and competitors' status

	Customer attributes	Med/health info
Not acquired (Real-time)	C Web record (external) Cash in / out flow data Purchase data Location data	F Lifelog info - Meals/exercise DAI-ICHI LIFE SUMITOMO LIFE - Vital Link with electronic med record
Not acquired (Fixed-point)	B Life events Annual income asset data Sampo Japan Nipponika Hinawari Life Academic/ work background Mobile/E-mail/LINE	E Med exam data DAI-ICHI LIFE SUMITOMO LIFE NISSAY Disease screening data Genetic test data
Acquired (Not sorted out)	A CC record script Family info (Insured)	D Med cert info - Med institution - Diagnosis/ disease details Benefit info - Name-identification of insured Walk counts
Acquired (Sorted out)	Policyholder info - Gender, age, etc. NB, Policy Admin, Claims info Policy info (products) SCC record script Web record (OHP)	Med cert info - Disease - Diagnosis/disease - Treatment Benefit info - Date/amount of payment Notification

Expansion of use cases via enhanced data usage



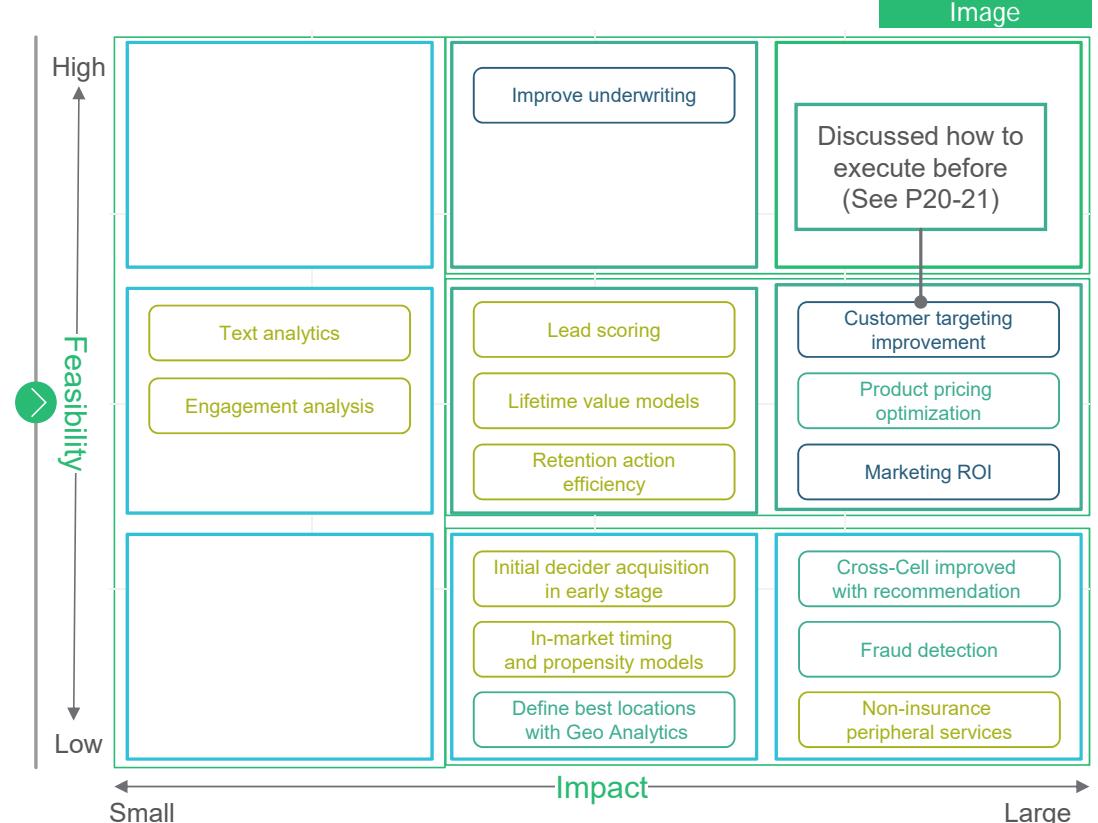
Project approach

Use Case (partial examples)¹⁾

Non-insurance peripheral services	Potential customer retention by non-insurance peripheral services(e.g., health management, improvement program)
Product pricing optimization	Product pricing optimization via win-loss history or external environment analysis etc.
Marketing ROI	Optimize Marketing mix with calculating Marketing ROI such as Web ad or TV CM etc.
Customer targeting improvement	Define upsell actions with existing customer clustering analysis
In-market timing and propensity models	Improvement in targeting based on analysis of needs realization timing and prospect characteristics
Initial decider acquisition in early stage	Find and acquire 'initial decider' in early stage
Lead scoring	Score prospects and focus acquisition efforts ; reduce mktg. costs
Improve underwriting	Improvement of assessment based on limit / refuse / payment history
Retention action efficiency	Identification of user characteristics and behaviors that predict lapse / cancellation
Cross-Cell improved with recommendation	Real time recommendation with user profile and behavior analysis
Engagement analysis	Analyze volume, quality and type of interactions that result in high engagement (and therefore retention or cross sell)
Lifetime value models	Prediction of the net profit attribute to the entire future relationship with a customer
Text analytics	Text mining and analytics for customer service enhancements
Fraud detection	Fraud detection
Define best locations with Geo Analytics	Optimize office location and sales territories with Geo analysis

1: Partially selected from BCG use case list.

Assessment result (hypothesis)



Use cases deployed to realize value

Churn prediction: The WHO?

Continuous improvement of accuracy

Average cancellation rate (Sample period)

2Q 2018 3Q 2018

Top 1% Lift Cover Top 5% Lift Cover Top 1% Lift Cover Top 5%

X.XX% X.X X.X% X.X X.X% X.X X.X% X.X

3X accuracy improvement

Comps analyses scope

BCG analyses scope

Sales communication optimization: The HOW?

Optimal contact frequency via Sales Agents

Annual cancellation rate (%)

XX times XX times XX times XX times

X.X X.X X.X X.X

Optimal productivity

Customer grip strengths identification

Annual cancellation rate (%)

Y1 Y2 Y3 Y4 Y5 Y6 Y7 Y8 Y9

X X X X X X X X X

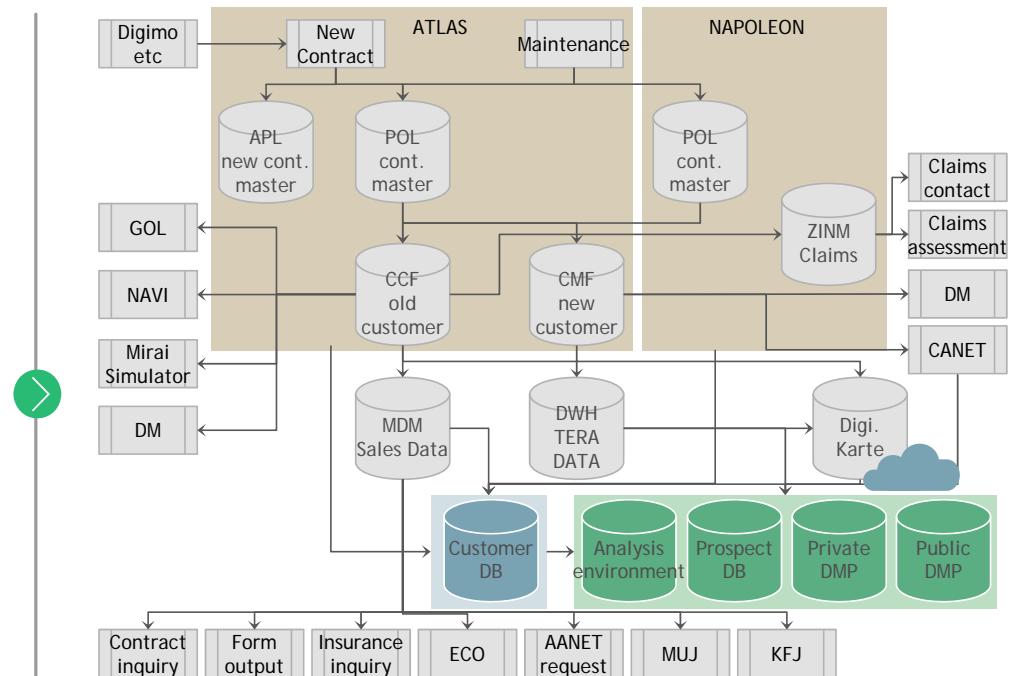
Agents w/ weak grip

Project Approach: Review current infrastructure and data initiatives and define To-Be architecture

Data development to date and future required data elements
(current assumption)

	: Developed	: Developing
Contract DB	Contract Info.	Manage holder attributes, procedure history, etc. for each contract
Customer DB	Customer attributes	Attribute information attached to each contractor (name, address, product, etc.)
	Contact history	Integrate contact history of each contractor
	Procedure history	Integrate procedures of each contractor (policy admin, insurance claims, etc.)
New acquisition platform	Potential customer attributes	Store attribute information of prospective customers before contract
	New channel	Behavior history at new touch points such as agents/CC, mobile/new service, etc.
	Private DMP	Store web history, statistical information, etc. used for analysis
	Public DMP	Store web action history / life stage data acquired from 3rd Party
Matching platform	Integrated name identification	DB for data matching for linking contract customers and prospects
	Integrated contact history	Data matching DB for transparently grasping the response history
Analysis environment	Big data processing	High-speed processing environment for mass data processing and mass storage
	Sand box for trial	Sandbox environment for data analysts to analyze and verify

To-Be architecture (current, high-level hypothesis)



Rather than consolidating all customer information, extend the data architecture flexibly while establishing linkage with the customer DB, as well as leveraging existing data analysis environment such as DWH

Project Approach: Develop target data roadmap

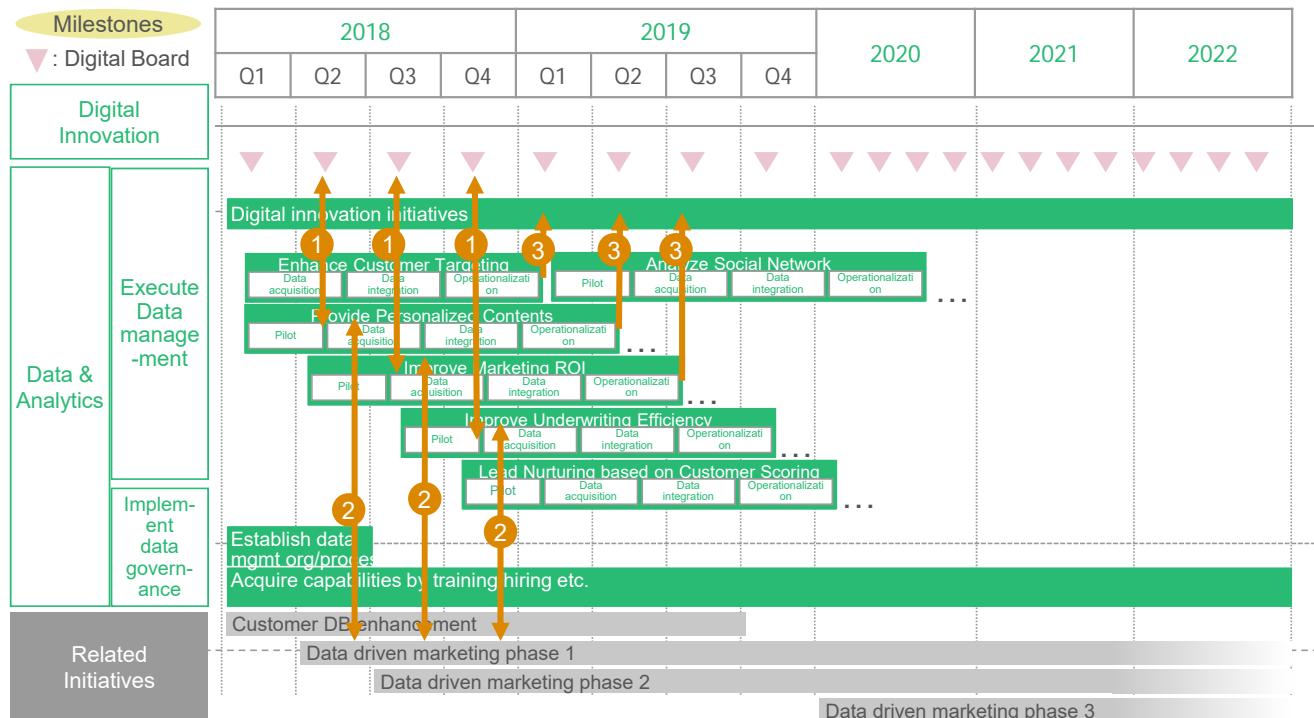
Key considerations for roadmap development

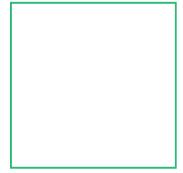
- 1 Necessary to discuss the result of PoC/pilot at the Digital Board and obtain execution approval, before full-scale deployment of each data initiative
- 2 Necessary to consider the relationships with existing relevant initiatives (e.g., customer DB / DMP development)
 - De-duplication of data collection
 - Coordinate dependencies for initiative implementation etc.
- 3 Usage of data towards sub-journeys in Digital Innovation as prerequisite



Necessary to define a roadmap considering all dependencies and forming alignment with sub journeys of Digital Innovation, existing data related initiatives, and Digital Board approval timing

Data roadmap output image





Vignettes

Example 2: European Insurer

Client at a glance



1st French health group protection



4.8 M parties from group contracts and 1.8 M individuals



212k insurance group contracts



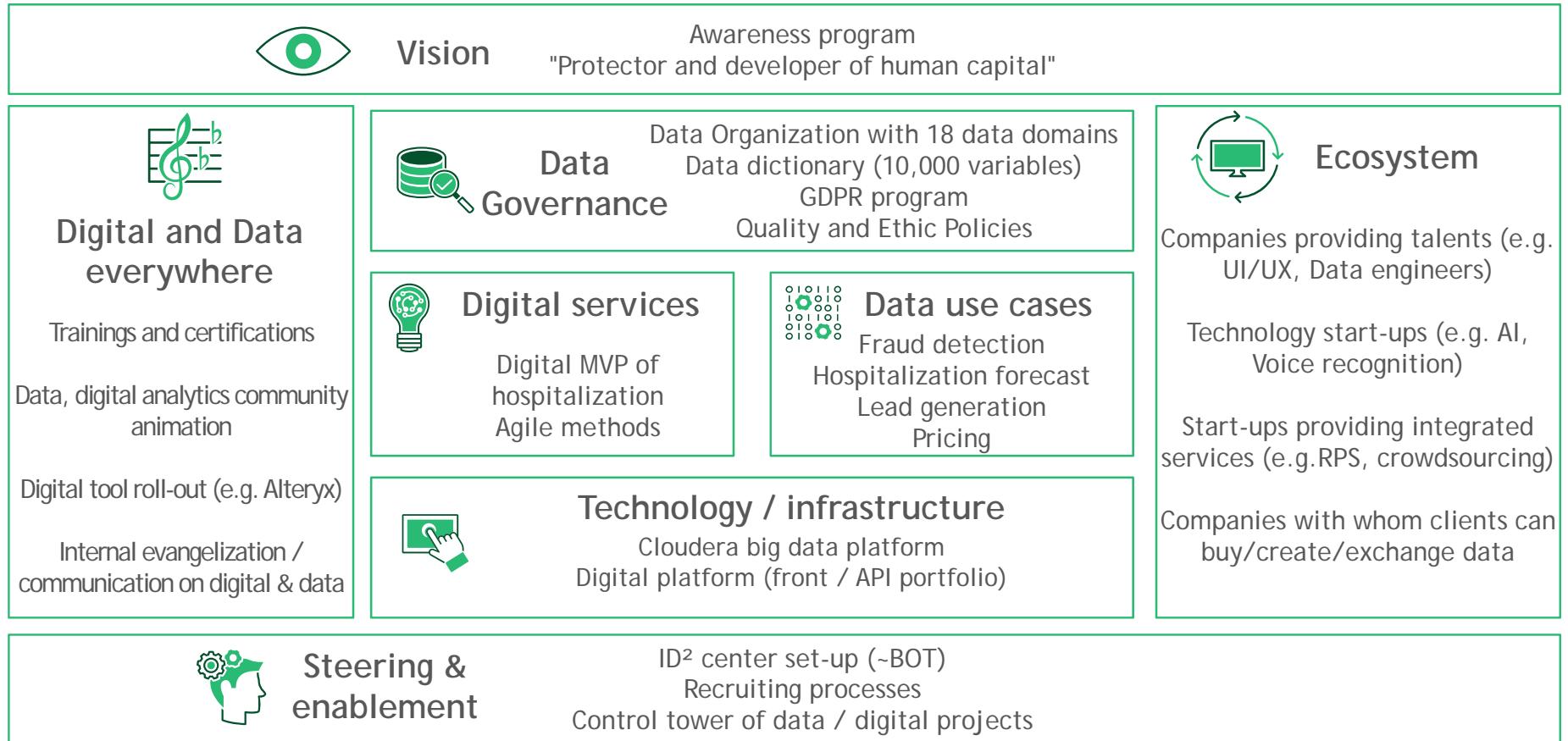
3.8 €Bn revenue

3rd French pension insurance company

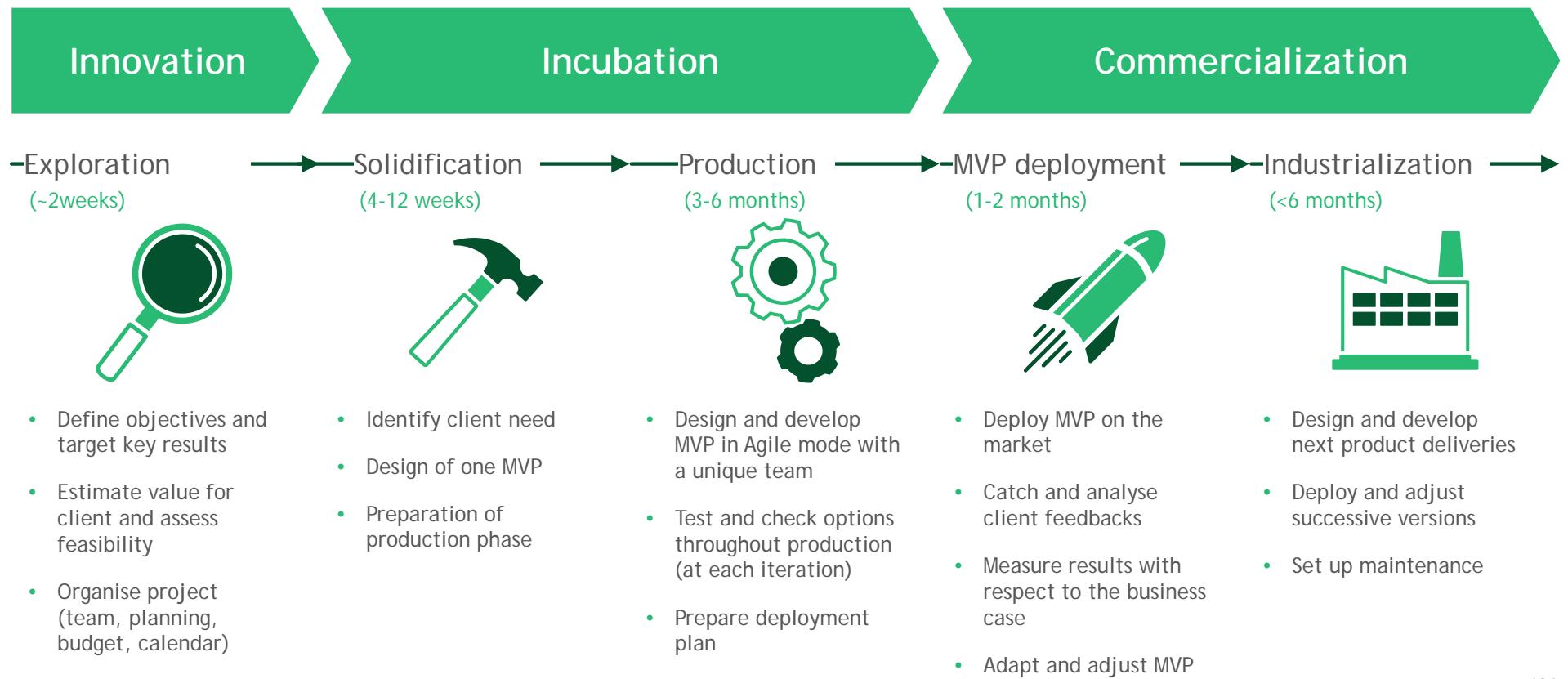
3 M parties & 2.9 M pensioners

198k pension group contracts

BCG worked on all blocks of Data & Digital



Digital services: a 5-step process from innovation to commercialization



4X results delivered due to deployment of use cases

Issue: low accompaniment services' utilization



Hospitalization services in MM differentiation strategy

But services included in contracts not used

Solution: analytics to launch promotion



Data from Health reimbursements' history, hospitalizations & insured profiles



Random forest algorithm used with ~100 variables among ~300 tested



Real scope test: 300 people chosen by model contacted (hospitalization forecasted)

Results: up to x4 better forecast ratio



Increase in hospitalization forecast ratio
4X

Increase in services utilization to be measured soon

Targeted promotion of services launched

Among a 300 people pool

- 80 if dictated by model
- 20 if chosen randomly

Next steps: medical knowledge use & profiling



Medical knowledge
Included in model/process



Profiling users
Of accompaniment services

Data governance in three blocks



Organization
Operating
model



Data management
Policies



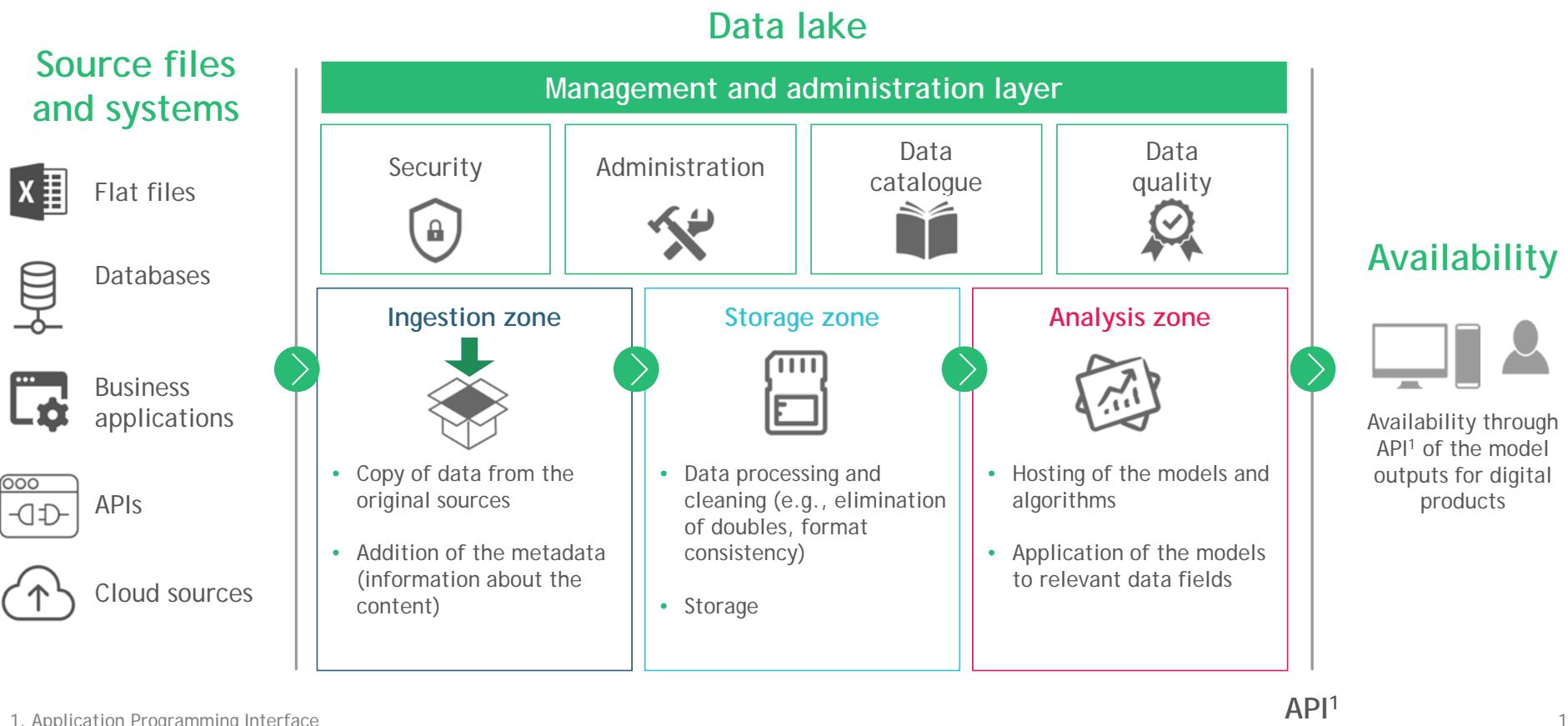
Data management
tools

- Roles and responsibilities
- Data mapping (domains and families)
- Appointment & on-boarding
- Initial quality roadmap & budget

- Data Quality policy
- Data & Metadata policy
- Ethical Charter

- Data dictionary
- Tool selections and deployment
- Mapping of personal data flow (for GDPR)

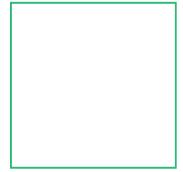
Technology: Built, operated & deployed a Data lake



The partnership model implemented

-  **12 to 24-month time horizon** to allow value creation from use cases
-  **Quarterly objectives** along key areas of the acceleration roadmap
-  **Monthly resource planning** (internal, BCG, third parties)
-  **Joined teams** under client's leadership
-  **BCG operating roles** with client and preparing handover
-  **Integrated BCG teams** with Gamma and Platinion, beyond traditional consulting profiles
-  **"Asset building" mindset** to create lasting capabilities, tools and methodologies
-  **Toolbox of methodologies** from first waves of initiatives
-  **Ecosystem of third party providers**, beyond BCG, that will contribute too to client success
-  **Industrialization obsession** within every choice and process created

Impact: € 10 Million bottomline value



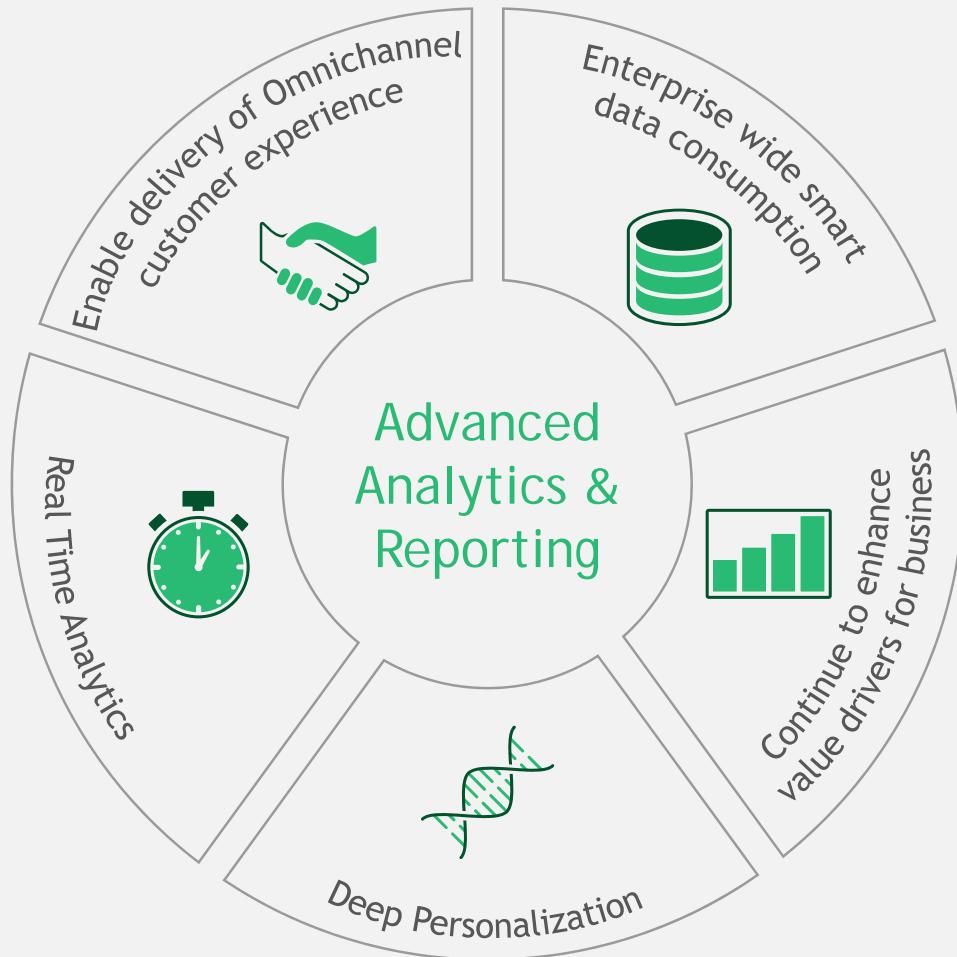
Vignettes

Example 3: One of the largest Indian Private Bank

Client: One of the largest & fastest growing private bank

		XX	CAGR
	Branches	2500-3000	28.61%
	Customers	25M+	22.58%
	# Employees	50,000+	29.49%
	ATM	12,000+	37.33%
	PAT	\$1B+	-

BIU Vision - 5 key themes



Current infrastructure not supporting growth, ambition



Stretched Architecture

- Unwieldy and complex architecture
- Lack of low cost scalable platform
 - High utilization of storage
 - Capacity and financial constraints
(Storage requirement and cost doubling every 3 years)



Constrained Usability

- Monthly refresh required for select data
 - Leading to 8-12 hour TAT for ad hoc queries
- High job failures due to large complex queries



Data Type Limitations

- Inability to handle unstructured / semi structured data
 - e.g. voice / text analytics, cache history
- Complex real time execution
 - e.g. real time offer generation



Limited Analytics Suite

- SAS heavy analytics
- Limited diversity in analytics
 - R, Python not used
 - Constrained in machine learning, real time streaming analytics

Created future ready architecture design and implementation roadmap



Strategic Design

Target Architecture Design

- Starting position assessment; Requirement gathering
- Define target architecture for the data warehouse

Platform Choice

- Platform options assessment and selection
- Toolkits and functionality selection with platform

SI Vendor Onboarding

- Vendor selection and onboarding
- Define scope of work and contracting

Analytics Set Up

- Identify the critical analytics tools
- Integrate the tools to the workbench

Use cases

- Test capabilities of data warehouse (big data lake)
- Adapt transformational use cases



Implementation Planning

Data Migration

- Identify the most critical datasets for Phase 1 migration
- Develop a roadmap for the priority datasets

Reporting Migration

- Compile list of reports and shortlist the critical ones
- Develop a roadmap and identify tools for report generation

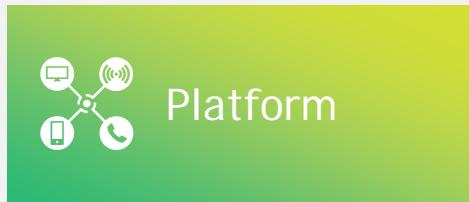
Use Case Migration

- Shortlist all current use cases
- Assess the roadmap for migration into lake architecture

Training & Enablement

- Lay down governance mechanism
- Developing organization structure and training modules

4 Key design choices made



Platform

- Evaluated choices amongst 5 major providers of Hadoop platform
- Capabilities, ease of use, lock-in, cost and support evaluated



Architecture,
Infrastructure

- Infrastructure deployment model - Cloud, On-premise, Hybrid
- Design to support real time and batch needs of organization



SI Vendor

- Evaluated 20+ SI vendor options to implement big data lake
- Shortlisted and interviewed vendors to finalize implementation partner



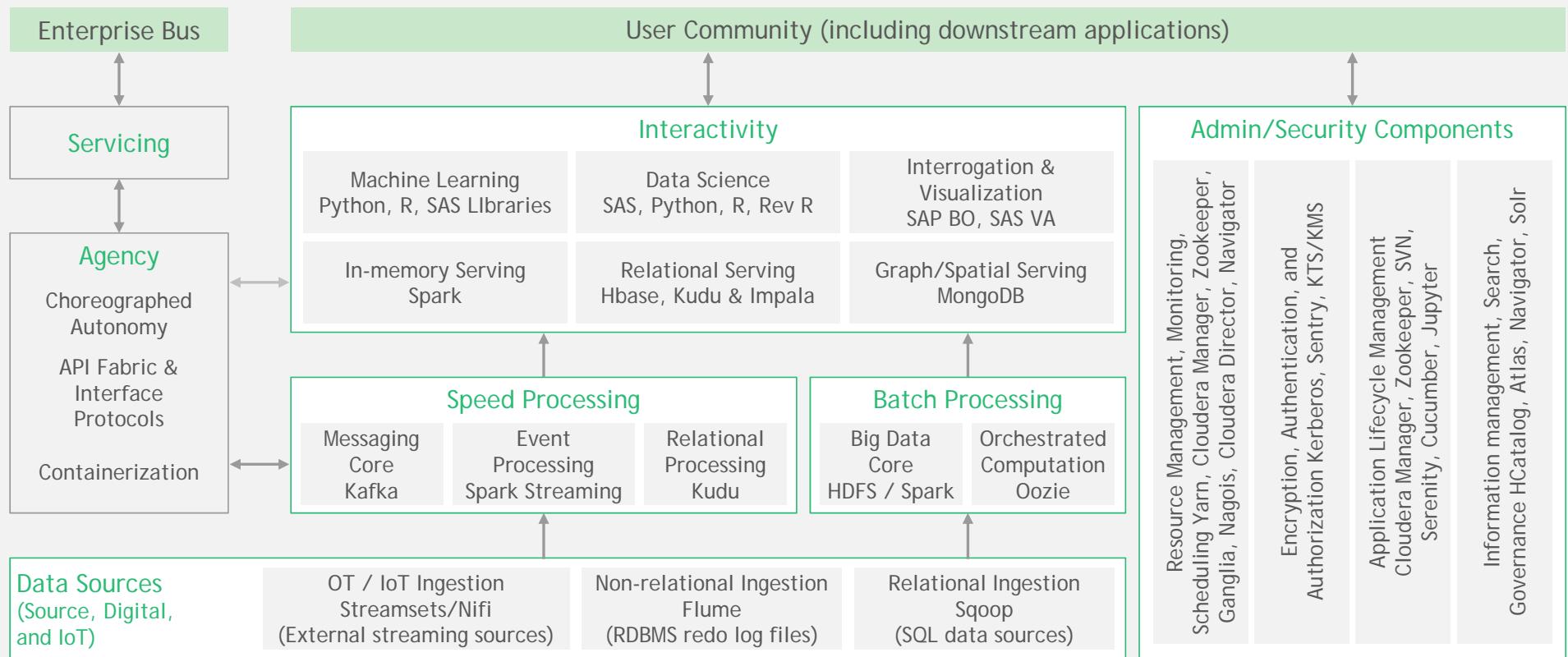
Analytics
Workbench

- Assessed implications on current analytics workbench and skillsets
- Architecture to support existing and new analytics tools

Selected the new BIU platform for the client: Market leader in Hadoop, user friendly administration, India based support team

	Platform 1 (selected)	Platform 2	Platform 3	Platform 4
Open Source Components	● Open source heavy, with some customized tools	● Fully open source	● Several customized tools added to open source core	● Customized Hadoop platform, limited open source software
Customizations	● Highly innovative, best-in-class customizations and solutions	● Open source components, no unique offering	● Less customization to core platform; Focus on analytics	● Highly tailor-made core platform, with unique solutions
Specialized Analytics Suite	● Connects to all basic analytics tools; No specialized offering	● Connects to all basic analytics tools; No in house tools	● Several advanced analytics products; Integrated Watson	● Connects to all basic analytics tools; No unique offering
# of Installations	● Dominant platform	● Medium market share	● Limited market share	● Medium market share
Timeframe for Upgrades	● It usually takes 6 months more than Platform 2	● Very fast due to "100% open policy"	● Laggard in adopting updates to open source components	● Requires time to add Apache updates
User Security Control	● Extensive and widely integrated security features system	● Basic features, less integrated than competitors	● Extensive security protocols and tools	● Mutable keys issue generating possible bugs
User Friendly Tools	● Administration tools are very user friendly	● Relatively not user-friendly, has basic interface	● Complicated tools, but very good for data scientists	● Complex platform, without user friendly interface
Advanced Query Function	● Impala for SQL enhanced by Kudu	● Stinger improved Hive, but still lower performances	● Big SQL is a fast tool with large language compatibility	● Drill is a rapid SQL query engine
Data Governance	● Navigator enables end-to-end data governance	● Doesn't have an end to end data governance solution	● Comprehensive and full tool package	● Full offer with Drill also acting as a security and audit tool
Mumbai Presence	● Yes	● No	● Yes	● No
Indian SI Network	● Wide network of SIs	● Wide network of SIs	● Limited SI network	● Few possible partners have implemented the platform
Licensing & Support Cost	● Some features available only with the support package	● Limited support cost	● Some tools will require licensing	● Core platform products requiring licensing

Multi-dimensional functional architecture proposed



Cross functional (business and IT) value delivered



Low-cost Scalable Platform

- Horizontally Scalable platform at fraction of cost
- 8X processing power 1.2X storage at 0.2X cost



New Capabilities Added

- 10 new business and technical capabilities added
- Enhanced ability to do current analytics and opens the door to new analytics delivery



Future Ready Architecture

- Flexible architecture, can add new tools easily
- Fast innovation in open source landscape
- Compatible with all data types, fast innovation
- Cloud ready, providing elastic scale



Advanced Analytics Roadmap

- Open source Analytics toolkit - R, Python
- 130+ new business analytics use cases identified
- 50% reduction in future SAS licensing cost



Enterprise Reporting Tool

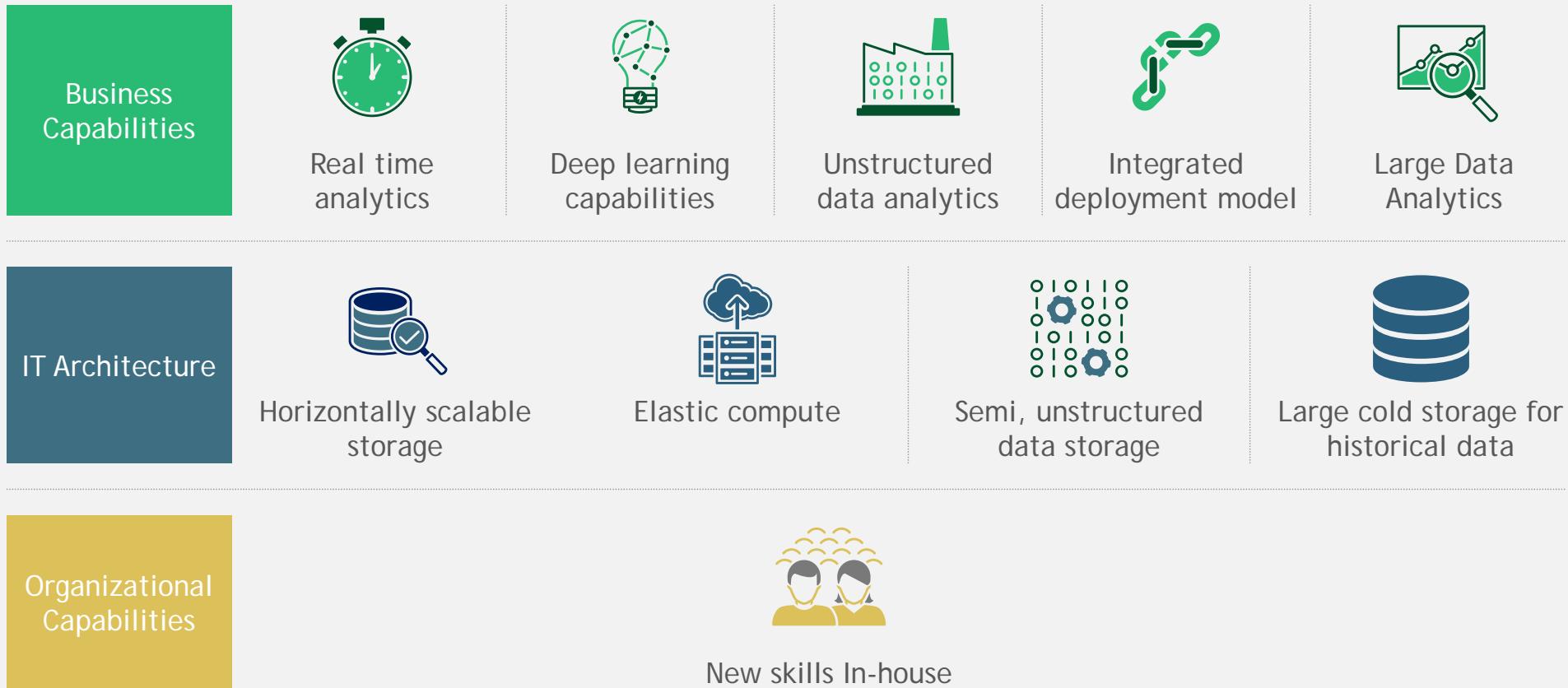
- Integrating multiple reporting formats to one tool
- Pilot of NLP based report queries



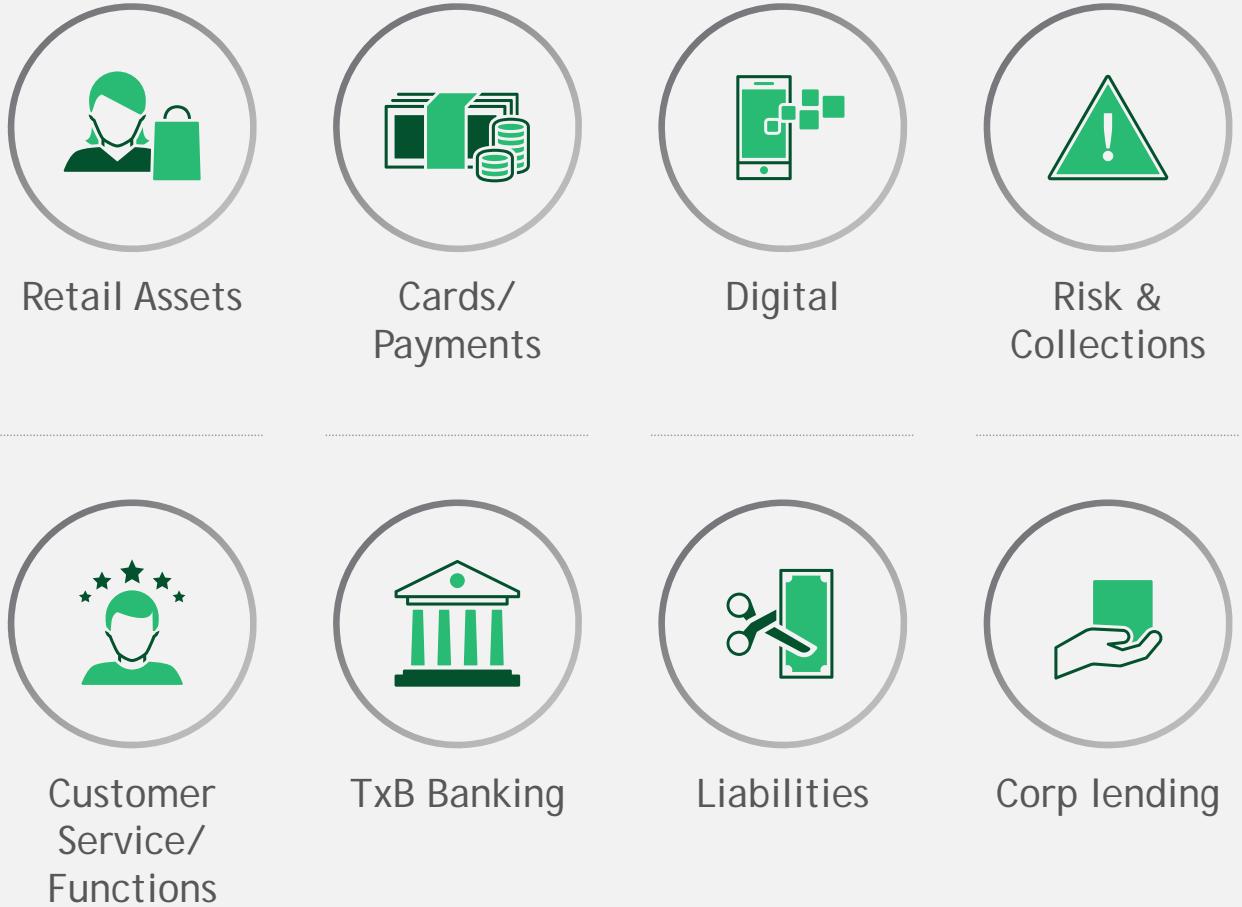
Governance and Enablement

- Establishing key governance policies and organizational structure for the bank
- Enabling team through core trainings programs

Multiple new capabilities enabled across key dimensions



~250 use cases identified across business verticals



Pilot use cases executed to prove Big data capabilities

Use Case	Capability	Business Benefits
A-Score for PL applicants		<p>Integrated deployment</p> <ul style="list-style-type: none"> Establish API framework for model deployment 30% reduction in A-score model refresh time
Frequent refresh of B-Score for Agri loans		<p>Fast processing of large data sets</p> <ul style="list-style-type: none"> Distributed computing - faster execution
Collections analysis, agent action allocation		<p>Fast processing of large data sets</p> <ul style="list-style-type: none"> Timely delivery of inputs to downstream system 30% reduction in agent idle time
Contextual customer offers based on prediction of moment of truth		<p>Deep Learning</p> <ul style="list-style-type: none"> 30%-40% improvement in campaign effectiveness
Real time personalization of web-site shopping offers to customers		<p>Personalization, Unstructured data</p> <ul style="list-style-type: none"> 40% improvement in shopping offer conversions 1.5X customer spend on shopping offers
Web scraping, text analytics for cross sell to corporate customers		<p>Unstructured data analytics</p> <ul style="list-style-type: none"> 5X increase in TxB cross sell to ETB corporate customers 500-750 leads for NTB TxB customers
Real-time email prioritizing and sentiment analysis using NLP, text mining		<p>Unstructured data analytics</p> <ul style="list-style-type: none"> 5% Reduction in customer attrition Efficient use of senior customer service agents Improved customer satisfaction, response rate
Real time alerts and fraud monitoring on UPI transactions		<p>Real time</p> <ul style="list-style-type: none"> Real time alerts and preventive action

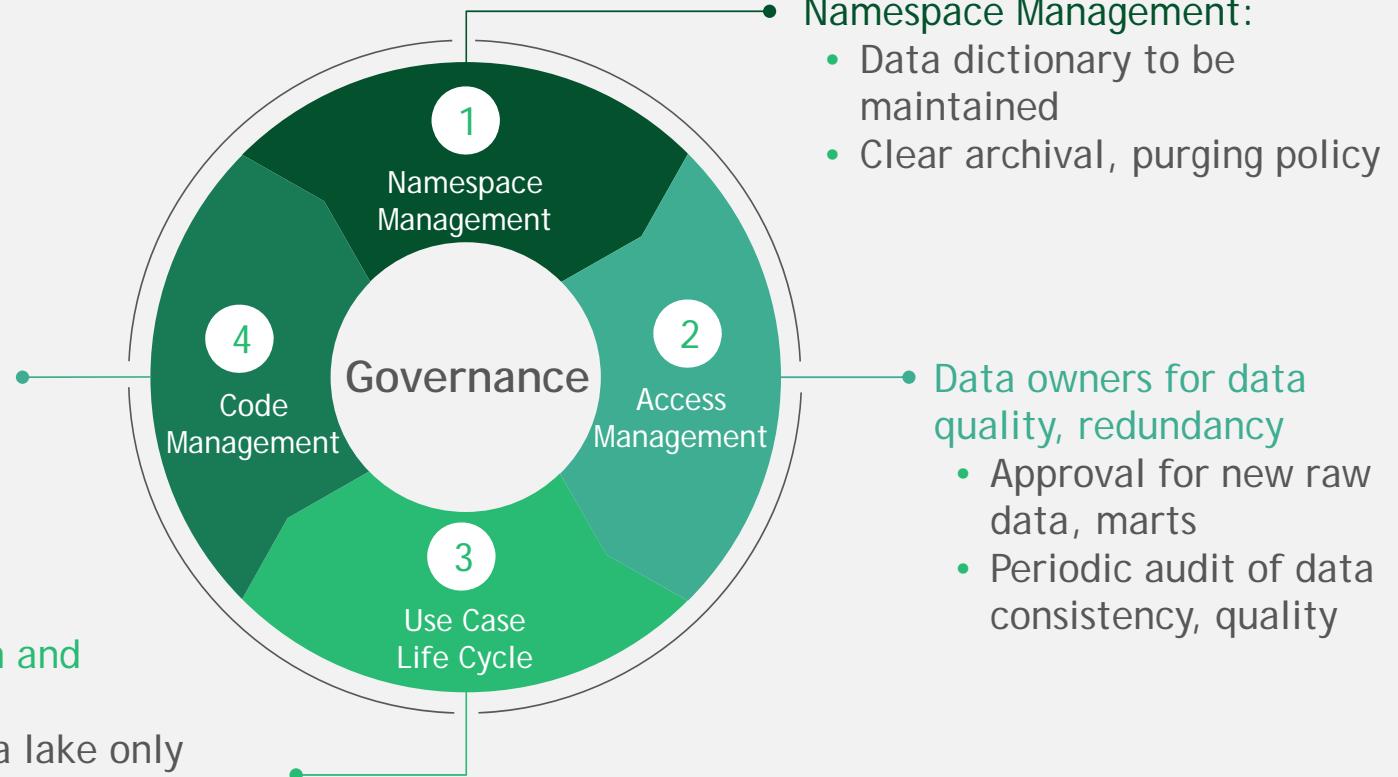
We established a robust governance mechanism for the big data lake

Deployment standards, governance

- Code deployment approval, change control
- Integrated production model deployment

Segregate data preparation and modelling

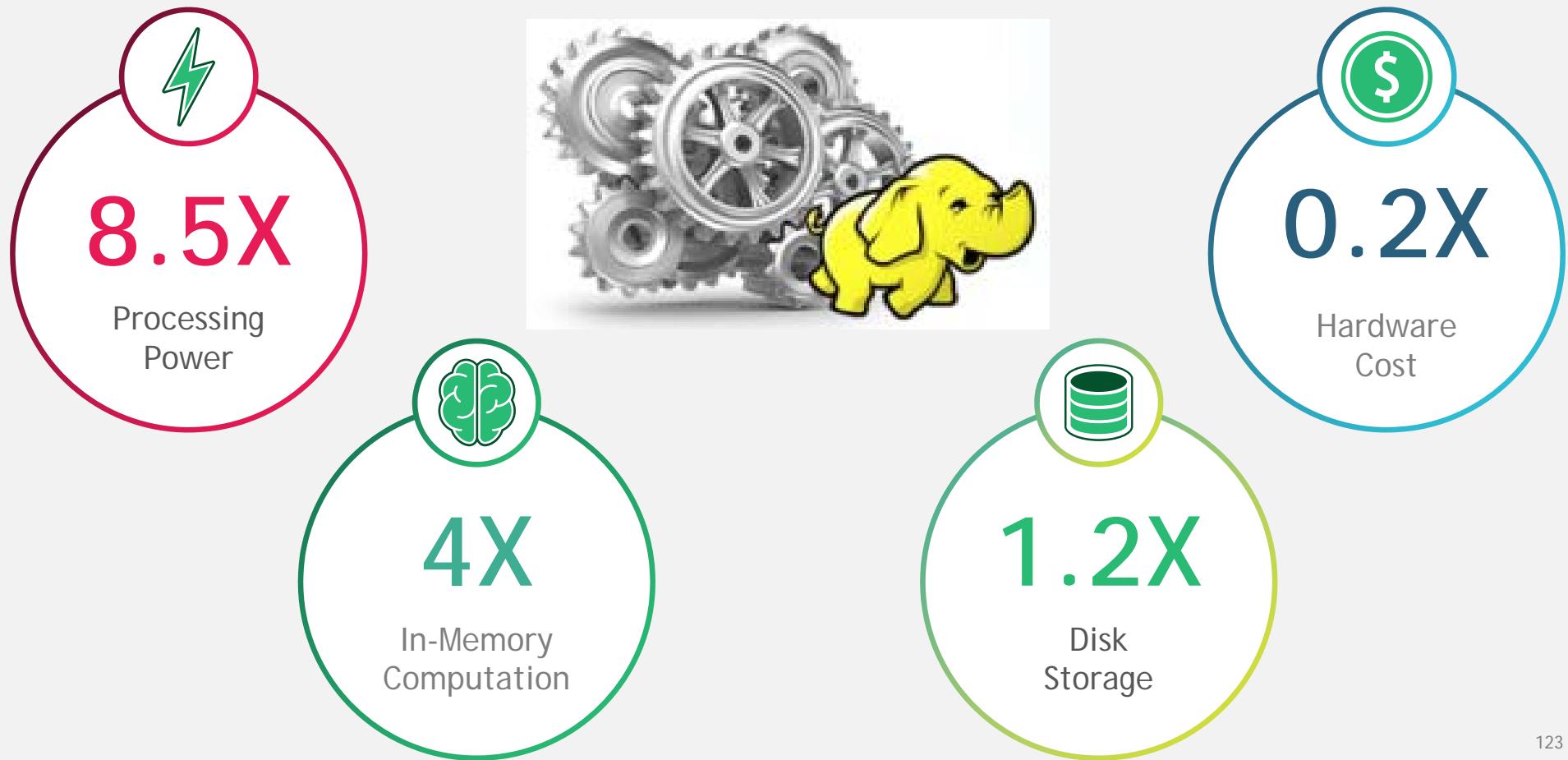
- Data preparation in data lake only
- Data movement to SAS for modelling

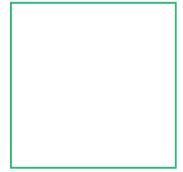


Roles and responsibilities were clearly defined in the new environment

Governance	Data Governance Lead	Data Governance team	
Platform Roles	Big Data Architect	Cloud Architect	Platform Support
Data Engineering	Data & Domain Architect	Data Engineer	Data-mart Owner
Analytics	Solution Architect	Data Scientist	Analytics Support
	Production/ Dev Ops Support	Data Analysts	
Reporting	Reporting - Analyst		
Infrastructure Roles	Infra Support	Cloud Support	

Multifold performance guaranteed at a fraction of cost





Vignettes

Example 4: One of the largest private Indian Insurer

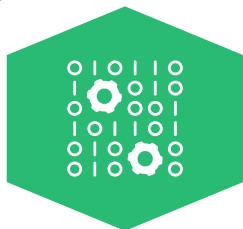
Analytics driven cross-sell program

4-pronged approach used to drive cross-sell using analytics



Data enrichment

Harness all available internal data; Partnerships with channels, credit bureaus, social media companies etc.



Cross sell lead generation through analytics

Identification of high propensity customers and next best offers using analytics



Multi-channel cross-sell execution

Integrated campaign across tele, email, app, website, SMS



Analytics capability

IT and data architecture road map; Integration of analytics and business processes; enabled team



Steps were taken for data enrichment through internal client data

Detailed work-plan

1 Baseline

Identified key variables

Identified sources incl. channels

Prepared roadmap

2 Structured data integration

Further integration developed within various lines/mediums of internal client data

Process/ IT changes proposed to capture new data fields on an on-going basis

Discussions held with channels for data requirement, commercial, operating model for transfer

Implemented the project with De-Dupe, cleaning for missing value imputation

3 Unstructured data integration

Identified unstructured data relevant for analytics

Devised mechanisms to extract data from multiple sources

Implementation undertaken on a sample basis

Used analytics to distil actionable data

Full scale implementation

4 Enablement

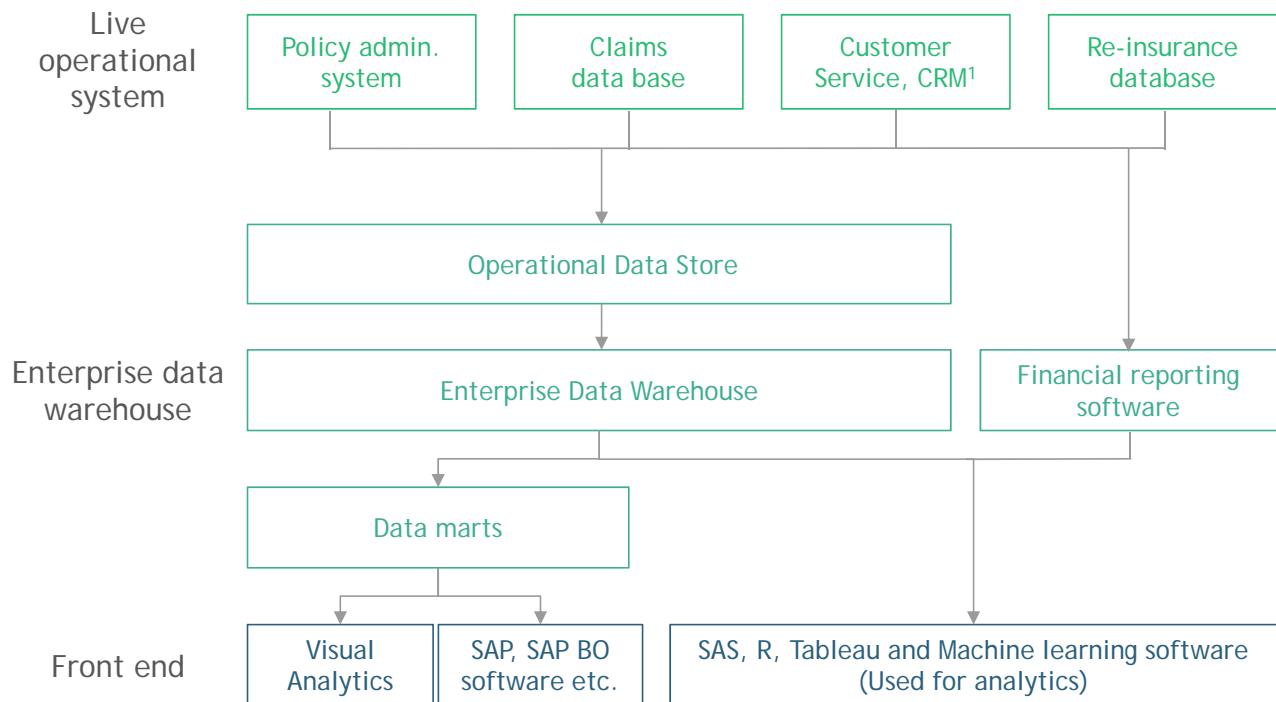
Continued integration of unstructured data

Continuous expansion in number of variables

Institutionalized periodic processes for continuous data enrichment

Steps taken towards developing a comprehensive consolidated customer view via utilising internal sources first

Data warehouse started capturing and combining data from various sources



1. Customer relationship management system
Source: Client interview, BCG analysis



Customer IDs & claim documents showed considerable enrichment potential

Established standard operating process for data capture from all future claims

IDs submitted during purchase and claims have a lot to offer

Vehicle registration ID	
Name: XXXX XXXX	Photo
Date of Birth: XX-XX-XXXX	
Occupation: XXXX	
Address: XX XX XX	
Vehicle registration number: XXXX	
Model: XX XX	
Year or purchase: XX XX	

 Claims form captures additional socio-economic variables - PoC² conducted with BCG data team for ~100 motor claims

Variable captured	Fill rate (%)	Enrichment (Fill rate * Claim incidence)
Date of birth	48%	14%
Occupation	38%	11%
Income	39%	12%
Family details	42%	13%

Cases of poor quality scans, handwritten IDs limiting OCR¹ potential

~10-15% data enrichment through ID scanning & claims forms

A one time exercise conducted for claims records & ID scanning

- With the help of existing data entry team and additional temporary staff

 Data capture for future

- Compulsory collection of Policy holder ID for claims
- Mandatory manual entry of IDs in case limited OCR potential
- Additional variables relating to income, occupation, family & emails to be extracted

1. Optical character recognition 2. Proof of concept

Source: Client interview, BCG Analysis

Multiple new partnerships explored to avail diverse data sets (1/2)

Source: Client discussions, BCG analysis



Government agencies/
databases

Examples

- Social numbers
- Unique identification numbers
- Motor registrations



Motor ecosystems



Health ecosystems

Partnership considerations

- Large customer database
- Demographic and identity information
- Established paid service

- Data enrichment for motor customer base
- May require product bundling and cross-sell pay-outs

- Customer health and fitness data indicating behaviour and lifestyle
- Need to create an ecosystem
- Offer for data monetization

Multiple new partnerships explored to avail diverse data sets (2/2)

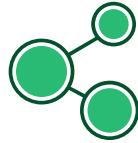
1. Peer to peer
Source: Client discussions, BCG analysis



Fin-tech companies



E-commerce



Social media intelligence

Examples

- Direct/ P2P¹ Lending
- Personal finance management - Payments/ wallets

- Shopping marketplace
- Real estate
- Travel
- P2P
- Loyalty networks

- Social media scappers and other analytics services

Partnership considerations

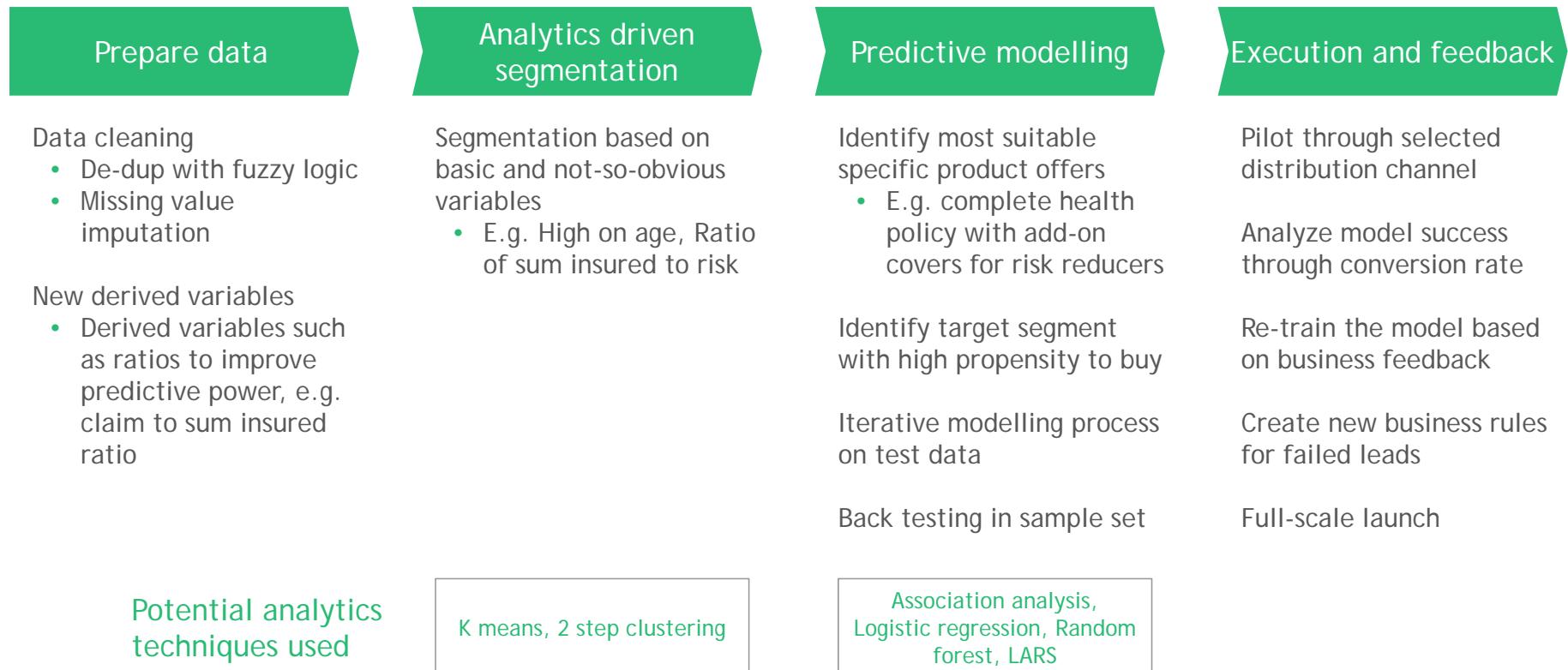
- Potential to understand financial behavior of customers
- Require product bundling and data monetization offer

- Require product integration and cross-sell pay-out

- Relatively low hit rate
- Potential to get socio-economic, lifestyle, behavior data and intents



Analytics driven cross-sell initiatives structured in 4 stages



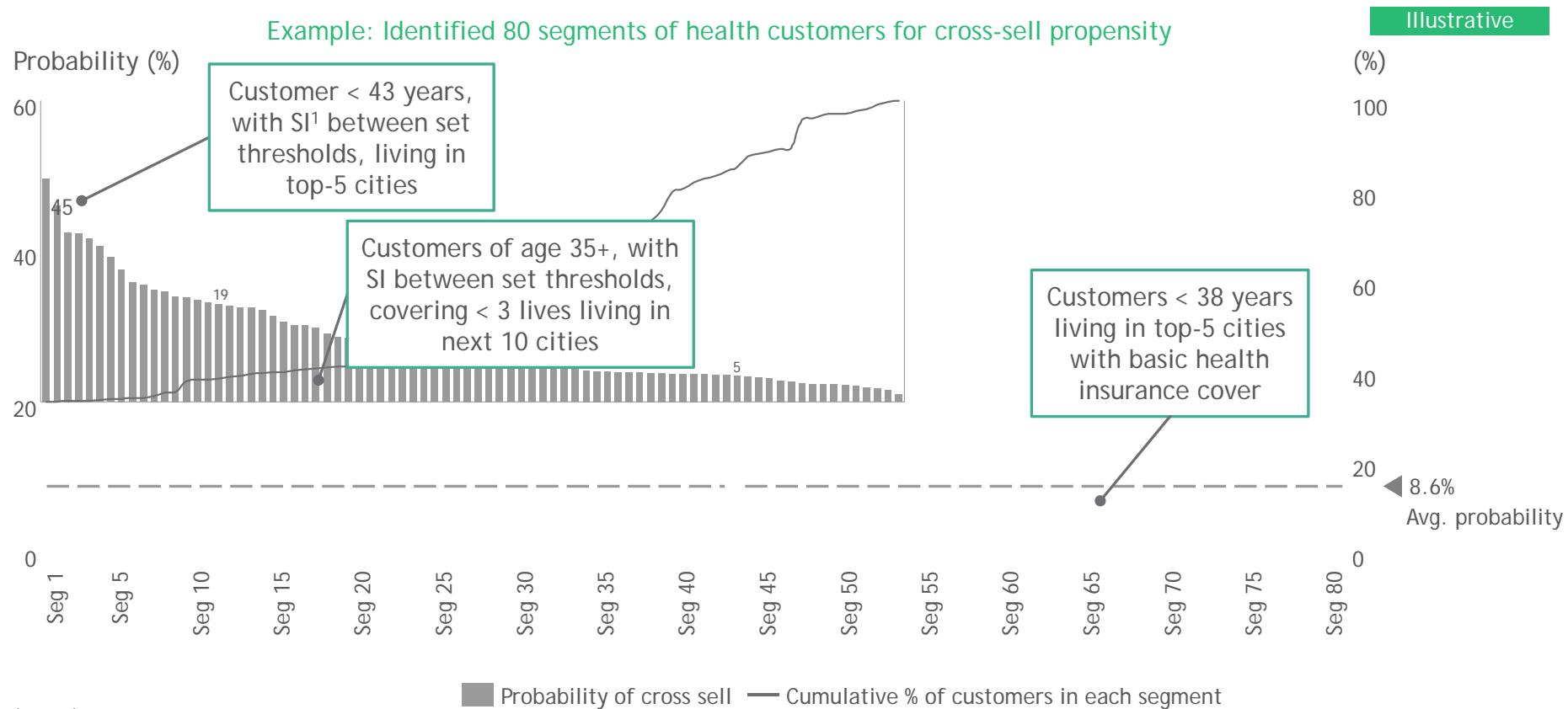
Source: BCG analysis

131

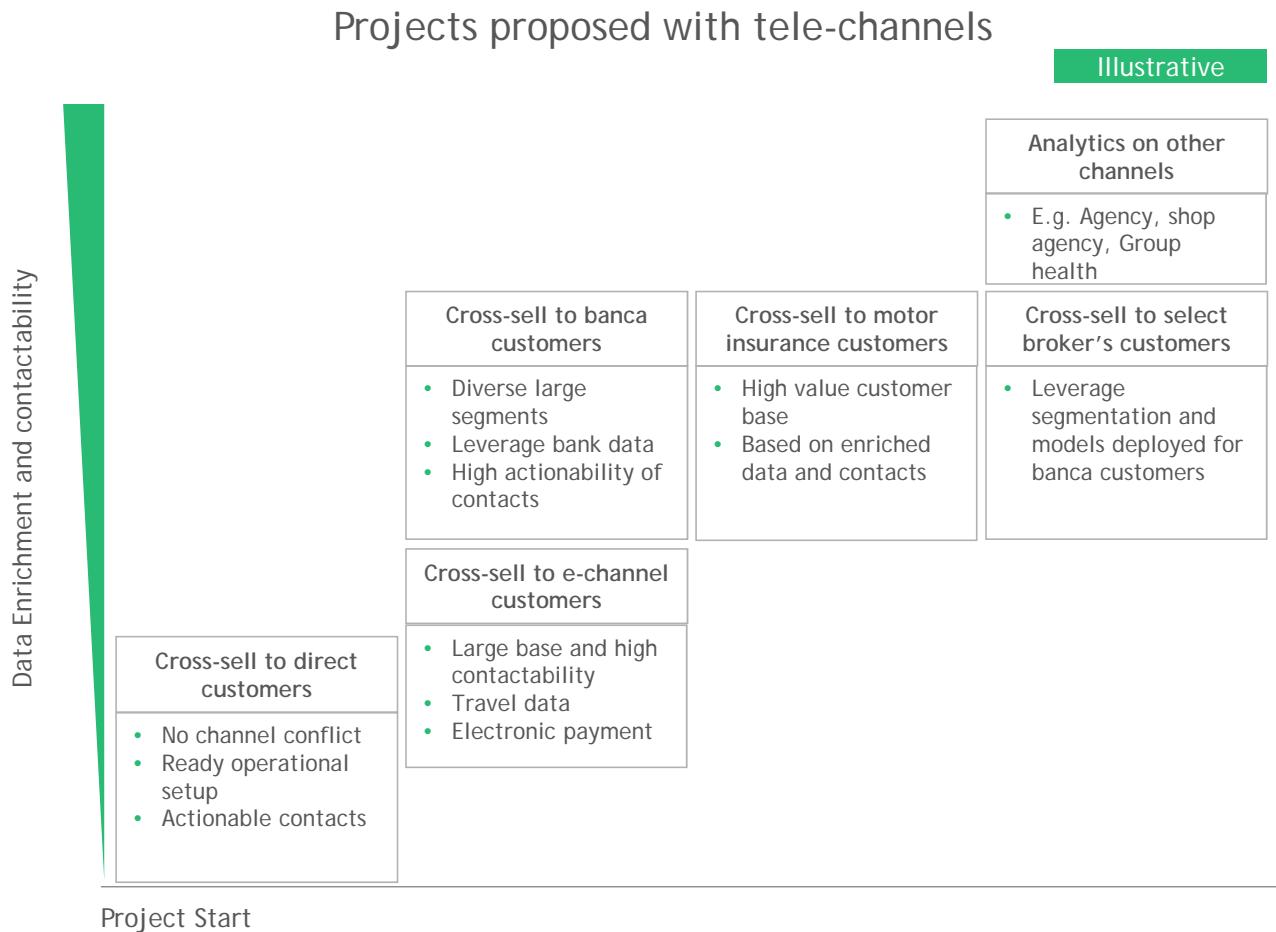


Developed multiple predictive models to identify high propensity customers

Health: analytics on e-channel health insurer repeat buyers indicates profiles where targeting efficiency could be 2X+



Evaluated different options for cross-sell initiative to be rolled out across channels over time





Launched and established integrated campaigns

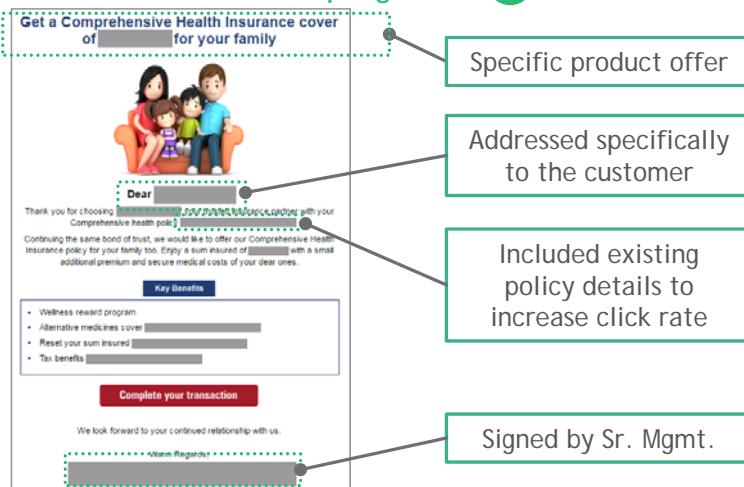
Cross-sell campaigns with customer specific messaging & text mining for banca partner transactions data to setup trigger leads

Case example

Emails sent earlier



Emails sent for the campaign



Insurance product

Earlier, bank was using limited analysis

... Now 30 text mining triggers set

Health



Home



Active customers having certain average quarterly balance

Home loan in last 2 years
Spends >= Amt. XXXX in 1 year on credit card

Customers with spends on

- "School"
- "Maternity" hospitals
- Travel portals
- High spends on apparel

Customers who have taken

- Joint account
- Add-on cards

Customers with

- High spends on furnishing
- High spends on jewelry

Customers who have taken

- Bank lockers



A holistic approach taken to build analytics capability across IT, people and processes

Setting the operating rhythm

Analytics immersion sessions for top-50 stakeholders

Cross-functional sprints

Joint business, business team workshops

- Areas, approach for cross-sell propensity modelling
- Generate hypotheses

360⁰ Communication

- Emails, newsletters, posters
- Integration in periodic department reviews

Roll-out and stabilize structured processes and roles

People capability and trainings

Roadmap for BIU org structure and roles

- E.g. Ingraining analytics champion in each business units

Study tours to BCG Centers of Excellence

Training to business users to use select analytics tools,

- e.g. Alteryx, Tableau

Online / off-line advanced trainings for business intelligence teams

IT and data architecture roadmap

Stakeholder workshop involving BCG experts on IT and data architecture roadmap

Workshops and meetings with relevant stakeholders for new IT / data initiatives

- E.g. integrating unstructured data

5

initiatives
undertaken to
improve call
center
productivity

- Automated call dialing process
- Enhanced CRM/ Dialer functionalities
- Improved agent monitoring
- Improved calling process
- Organizational interventions





Impact for the insurer across multiple dimensions, and counting

1.7X

contactable customers due to enrichment

2X

data density index¹ improvement

24Mn

customers added into the lead funnel

+38%

increase in GWP over baseline in 6 months

5X

improvement in email marketing response

1.4X

increase in call center productivity (pilots)

4X

cross-sell GWP potential established

+70%

increase in number of policies over baseline in 6 months

1. Data density index devised by BCG—weighted average of fill rate of various fields such as age, gender, income, digital savvy, etc.

Disclaimer

The services and materials provided by Boston Consulting Group (BCG) are subject to BCG's Standard Terms (a copy of which is available upon request) or such other agreement as may have been previously executed by BCG. BCG does not provide legal, accounting, or tax advice. The Client is responsible for obtaining independent advice concerning these matters. This advice may affect the guidance given by BCG. Further, BCG has made no undertaking to update these materials after the date hereof, notwithstanding that such information may become outdated or inaccurate.

The materials contained in this presentation are designed for the sole use by the board of directors or senior management of the Client and solely for the limited purposes described in the presentation. The materials shall not be copied or given to any person or entity other than the Client ("Third Party") without the prior written consent of BCG. These materials serve only as the focus for discussion; they are incomplete without the accompanying oral commentary and may not be relied on as a stand-alone document. Further, Third Parties may not, and it is unreasonable for any Third Party to, rely on these materials for any purpose whatsoever. To the fullest extent permitted by law (and except to the extent otherwise agreed in a signed writing by BCG), BCG shall have no liability whatsoever to any Third Party, and any Third Party hereby waives any rights and claims it may have at any time against BCG with regard to the services, this presentation, or other materials, including the accuracy or completeness thereof. Receipt and review of this document shall be deemed agreement with and consideration for the foregoing.

BCG does not provide fairness opinions or valuations of market transactions, and these materials should not be relied on or construed as such. Further, the financial evaluations, projected market and financial information, and conclusions contained in these materials are based upon standard valuation methodologies, are not definitive forecasts, and are not guaranteed by BCG. BCG has used public and/or confidential data and assumptions provided to BCG by the Client. BCG has not independently verified the data and assumptions used in these analyses. Changes in the underlying data or operating assumptions will clearly impact the analyses and conclusions.



BOSTON
CONSULTING
GROUP

bcg.com