

Service Portfolio



Tuhin Chattopadhyay, Ph.D.

Founder & CEO, Tuhin AI Advisory

An ISO 27001:2013 Certified Company



**India's Top 10
Data Scientists - 2016**



**Analytics and Insight
Leader of the Year - 2017**



**Artificial Intelligence
Leader of the Year - 2018**



**Digital Transformation
Leader of the Year - 2019**



CTO of the Year - 2020



<https://www.linkedin.com/in/tuhinai/>

International Experience

- 20 years of experience in academia & industry – delivers analytics solutions to organizations across USA, Europe, Australia, Africa & South-East Asia
- Keynote speaker at international conferences like Next Big Tech Asia 17 in 2017 at Kuala Lumpur and Sports Analytics Africa in 2018 at Johannesburg
- Jury Member of data science competitions across Europe & USA

Thought Leadership

- Authored books & more than 30 publications in international journals & conferences
- Editor-in-Chief of International Journal of Business Analytics and Intelligence (IJBAI)
- Interview to DZone, USA – <https://dzone.com/articles/coffee-with-a-data-scientist-tuhin>

Senior Leadership



Kunal Kanti Mondol

Chief Technology Officer

Digital Transformation



Sujay Bhattacharjee

Advisor, Data Engineering

Enterprise Architecture,
Big Data Analytics,
Cloud Platform and Services



Chandan Mukherjee

Head, Business & Social Research

Economics & Finance
Professional



Sudhakar Nammi

Head, Automation

Robotic Process Automation,
Business Process Reengineering,
Intelligent Automation



Diptesh Saha

Head, Cybersecurity

Cybersecurity, ISO
Certification, Cloud,
Managed Services

Client Portfolio



*Dr. Tuhin was able to combine academic rigour with pragmatic excellence and demonstrated stellar client skills. He developed a Marketing Mix Model with an accuracy/ **predictive performance of more than 90% after more than hundred iterations**, and still managed to deliver **it well before the scheduled time**.*

*Besides his thorough subject matter expertise in AI and Analytics, Dr. Tuhin is also adroit in making Data Science relatable to real world environments. **He has a vast repository of solutions** which are highly effective and easy to deploy. I would highly recommend him for any Industry 4.0 technology led industry agnostic digital interventions.*



Harshvardhan Sharma

Head
Auto Retail Practice at Nomura

Service Portfolio

**Artificial
Intelligence**

Blockchain

**Business
Analytics**

**Business & Social
Research**

**CaaS – CTO/ CDO/
CAO/ CISO as a
Service**

Cloud Computing

Cybersecurity

Data Engineering

**Digital
Transformation**

**Intelligent
Automation**

Managed Services

**Management
Consultancy (IA)**

Artificial Intelligence

Video Analytics & Surveillance

1. Vehicular Monitoring System
 - a. Traffic Monitoring
 - b. Automatic Number Plate Recognition
2. Automated Warehouse Operations
 - a. Automated Loading & Unloading
3. Workplace Safety
 - a. Human & PPE Detection
 - b. Human Pose Estimation & Analysis
 - c. Gait Analysis for Injury Prevention
4. Image based fashion recommender

Augmented Reality (AR)

Drone Image Identification & Classification

Smart Farming

Audio Mining

Natural Language Generation



Blockchain

InsurTech

- Distributed smart contract system to create a transparent, secure, immutable, and reliable ledger to document contracts, incidences, and records

Supply Chain

- Tracking Product Information - State of the product, shelf life, time, and location

Internet of Things - Machine-to-Machine (M2M) Transactions

- Immutable and transparent ledger of IoT devices, the data they collect, and the interactions between one another

Financial Services – Banking

- Money Transfer, Financial Settlement, Trade Finance

Travel

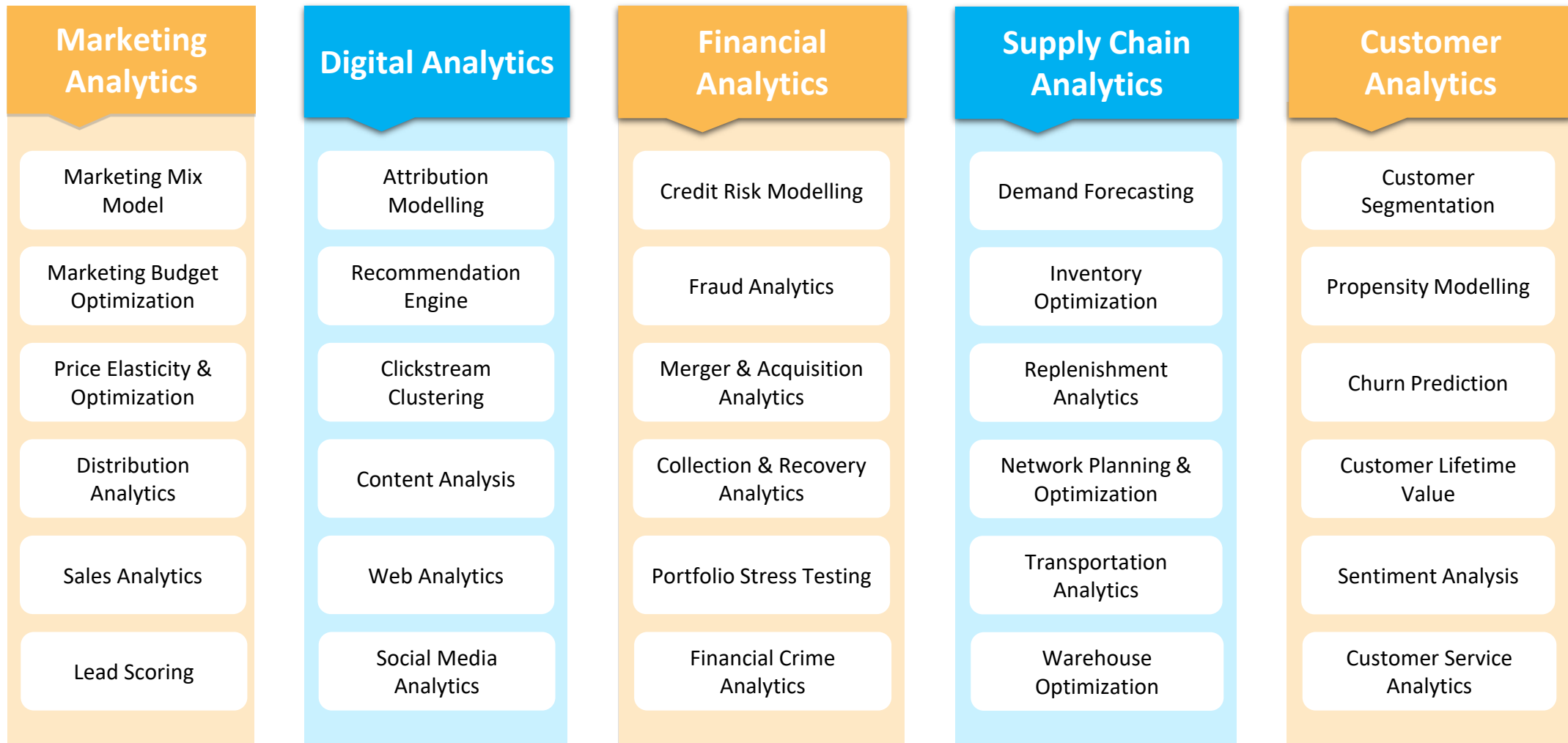
- Token assigned to each traveler allows TAs & airlines to identify customers and track their belongings simpler and faster

Automotive

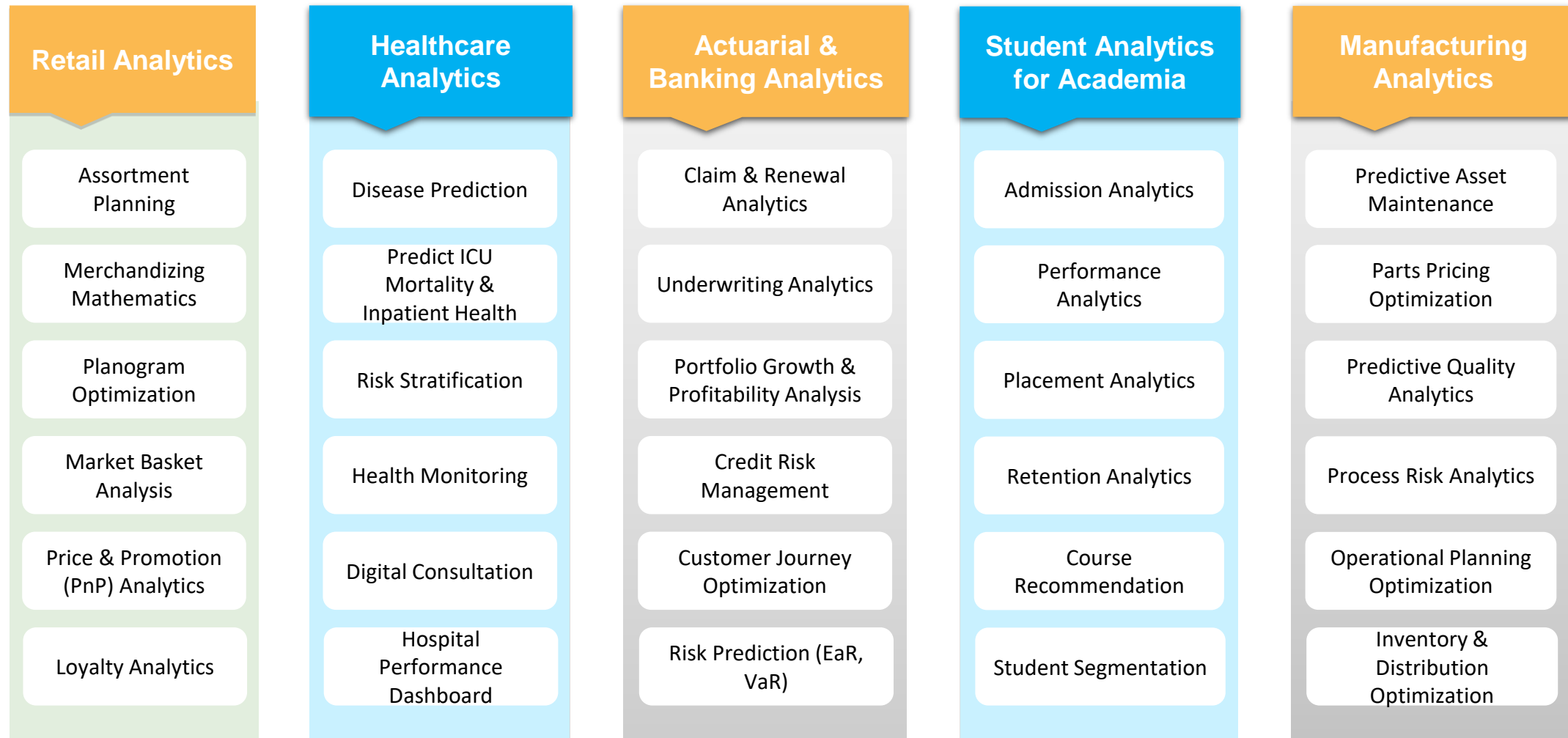
- Preventing intentional undesirable Interference In vehicle data and enabling the tracking of parts of the supply-chain



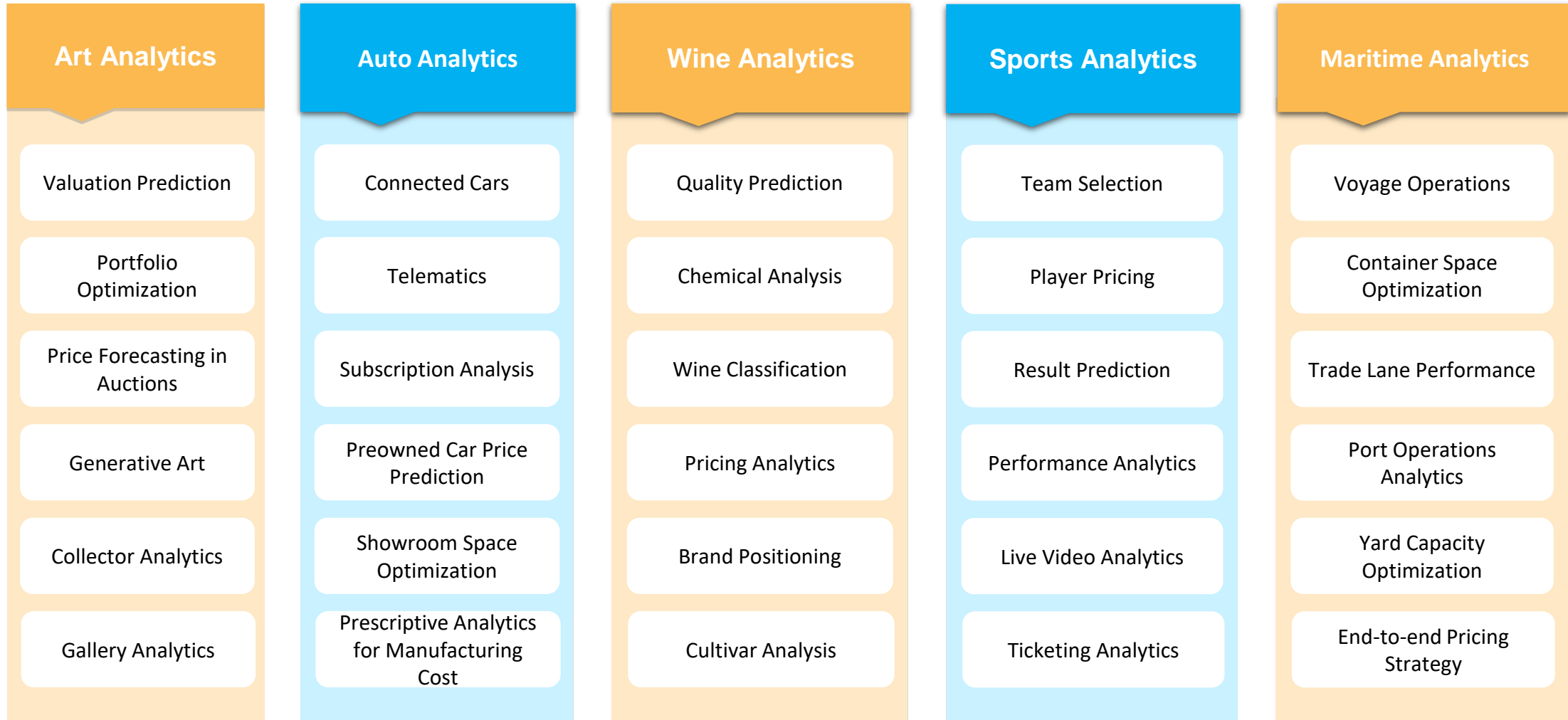
Business Analytics – Horizontal



Business Analytics – Verticals



Business Analytics – Verticals (Contd.)



Business Research



- A. Conjoint Analysis
- B. Choice Modelling
- C. Brand Equity & Positioning



- A. Competition Analysis
- B. Market Potential
- C. Innovation & Technology



- A. Strategy Testing
- B. Strategy Monitoring
- C. Strategy Implications



- A. Interest Rate Prediction
- B. Currency Prediction
- C. Risk Analysis



Social Research & Advocacy

Vision

- Emerge as a leading global think-tank and an advisor to Government and non-Government institutions
- As a change agent, improve the livelihood and sustainability of the small and marginalised segments by understanding the ground-level reality through research and advocate actionable insights
- Make this world a better place to live in through our research and intellectual inputs



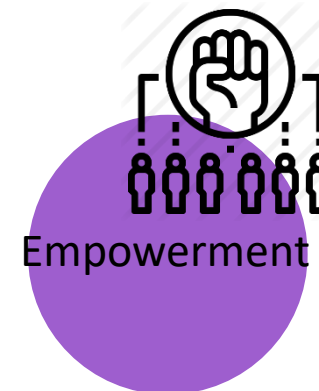
- A. Poverty
- B. Education
- C. Health



- A. Export/ Import Research
- B. Economic Policies
- C. PPP



- A. Requirement Analysis
- B. Policy Formulation
- C. Policy Evaluation



- A. Digital/ AI-ML Empowerment
- B. SME Empowerment
- C. Buyer/ Seller Empowerment



CaaS – CTO/ CDO/ CAO/ CISO as a Service

Hire Your Virtual C-Suite

Chief Analytics Officer as a Service (CAOaaS)

- 1.Tri-headed coalition with business & IT to generate business value for the company
- 2.Lead organization's data analytics strategy to determine how analysis gets done, tools/ resources used, outsourcing required
- 3.Deploy and scale AI/ analytics across the organization and improve business processes
- 4.Leverage analytics for capitalizing on the data for making sound decisions and achieving better outcomes for the business
- 5.Provide thought-leadership for raising the analytics quotient of prospects and customers

Chief Technology Officer as a Service (CTOaaS)

- 1.Develop strategies to increase revenue by RoI analysis to ensure technologies are used efficiently, profitably, securely
- 2.Envision how tech will be used while setting, evaluating & implementing the tech strategy to fuel tech infrastructure
- 3.Develop policies/ uses tech for products/ services that focus on customers, analyse target markets & create business models
- 4.Oversee company's data, security, network and take analytics powered preventive maintenance
- 5.Liaison b/n customer & business by getting a grasp on the target market and helping deliver IT projects to market



CaaS – CTO/ CDO/ CAO/ CISO as a Service (Contd.)

Chief Data Officer as a Service (CDOaaS)

1. Visionary to monetize your existing data by devising data strategy to drive revenue
2. Use big data analytics to spot new business opportunities and enable data-based innovation
3. Creating a data-driven organization by embracing data culture
4. Strategize data governance
5. Reskilling employees to help them use data more effectively

Chief Digital Officer as a Service (CDOaaS)

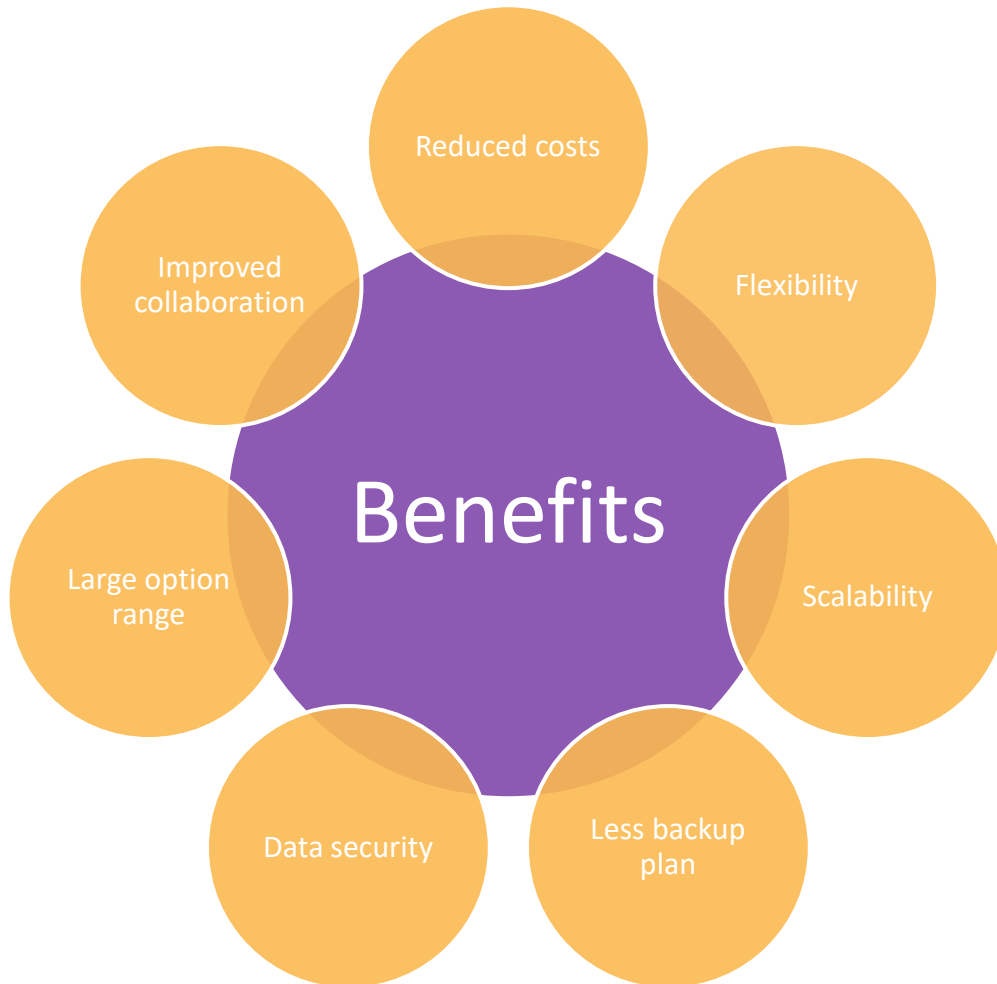
1. Transformer in Chief: Lead the digital transformation in a company
2. Lead the company to take advantage of digital technologies for improvement
3. Make digital integral to the strategy
4. Aligning customer technology with the go-to-market strategy
5. Developing new digital business models

Chief Information Security Officer as a Service (CISOaaS)

1. Visionary to deploy proactive measures anticipating potential security threats
2. Real-time analysis of immediate threats, and triage to mitigate any exigency
3. Roll out security policies customized for departments and hierarchies
4. Governance for seamless implementation of the policies
5. Developing robust security architecture to combat both external threats and any internal sabotage



Cloud Computing



Business model features

On-demand self service access to infrastructure, platforms and applications

Broad access through mobile phones, tablets, laptops and workstations

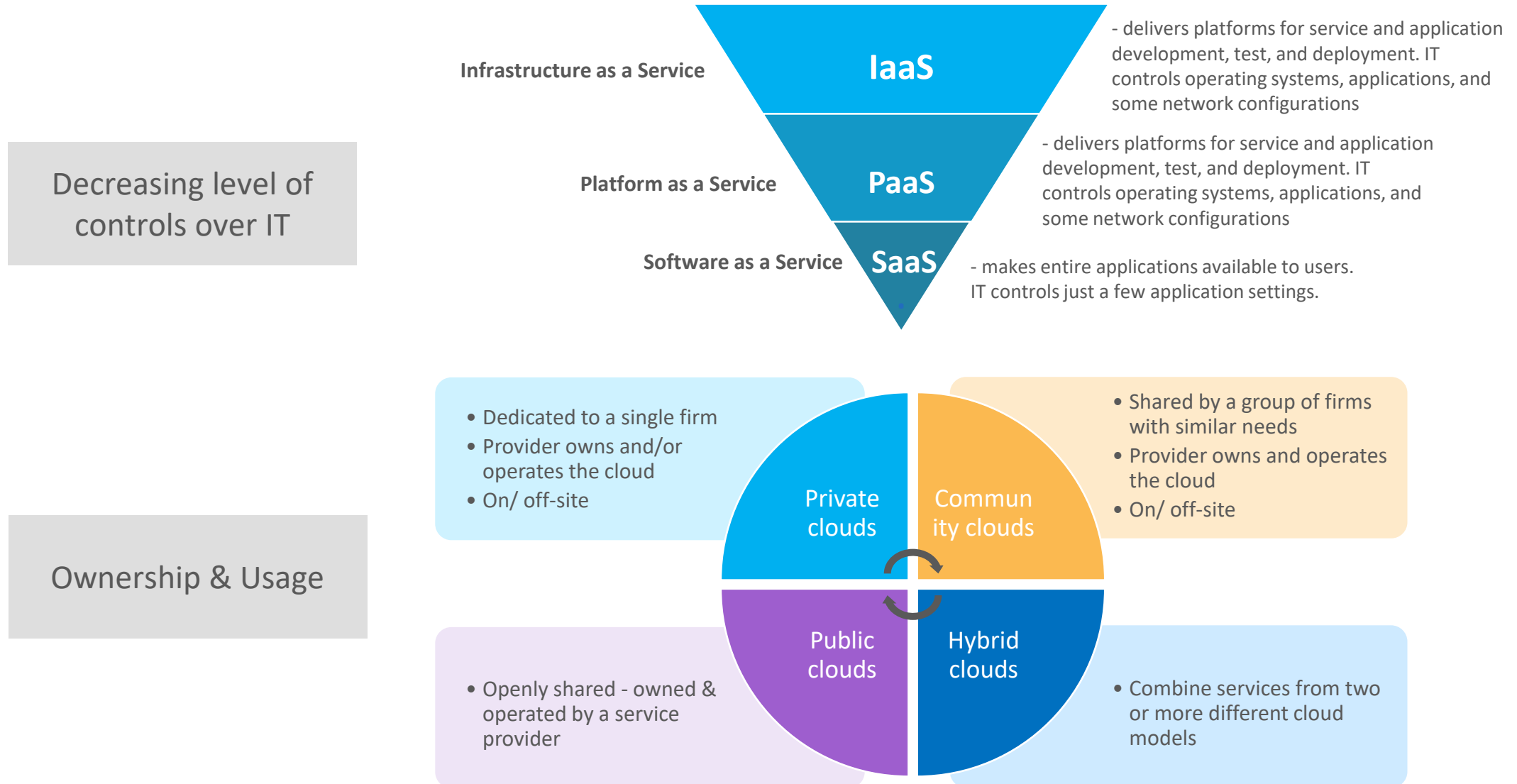
Resource pooling and automation to combine resources into managed services

Rapid elasticity that scales automatically and quickly with demand

Measured service with usage monitored, controlled and reported



Cloud Service Models



Cloud Strategy & Services

Re-hosting (Lift & Shift)

- On-premise to cloud

Re-platforming

- Move to platform of choices

Re-purchasing

- CI/CD, Analytics, Database, etc.

Refactoring

- Micro service, containerization, orchestration

Retaining

- Complex and sensitive services/applications

Retiring

- Less used functions might be retired

Consulting Services – Design

- Architecture Design
- Security Policy & checks
- Hosting Services

Support Services

- 24/7 Infrastructure Monitoring & Management
- User Administration
- 24/7 Performance Monitoring & Enhancement



Professional Services – Implementation, Integration & Migration

1. Creating Virtual Machine, Site-2-Site VPN

2. Azure SQL Backup Configuration

3. DR Setup Configuration

4. Office 365 Domain Verification and Configuration

- ✓ Verify the domain

- ✓ DNS configuration

5. Active Directory Federation services

- ✓ Prepare the Base Servers

- ✓ Prepare Active Directory

- ✓ Clean up Active Directory

- ✓ Create the SSL Certificate Request (CSR)

- ✓ Complete the Certificate Request (CSR)

- ✓ Assign the Completed SSL Certificate

- ✓ Configure Local AD FS Federation Server

- ✓ Configure Federation Trust with Office 365/ any Application

6. Integration & Collaboration Services

7. Platform migration Services

8. O365 Migration, User Creation & Monitoring

9. System Migration & Cloud System Revamp

10. Database Migration

11. CRM Customization

12. SFB Configuration and Implementation

13. Integrating Dynamic CRM with Exchange, SFB, Outlook, and SharePoint

14. Azure VM Creation

15. Site-Site VPN

16. Point to Site VPN

17. Disaster Recovery Services

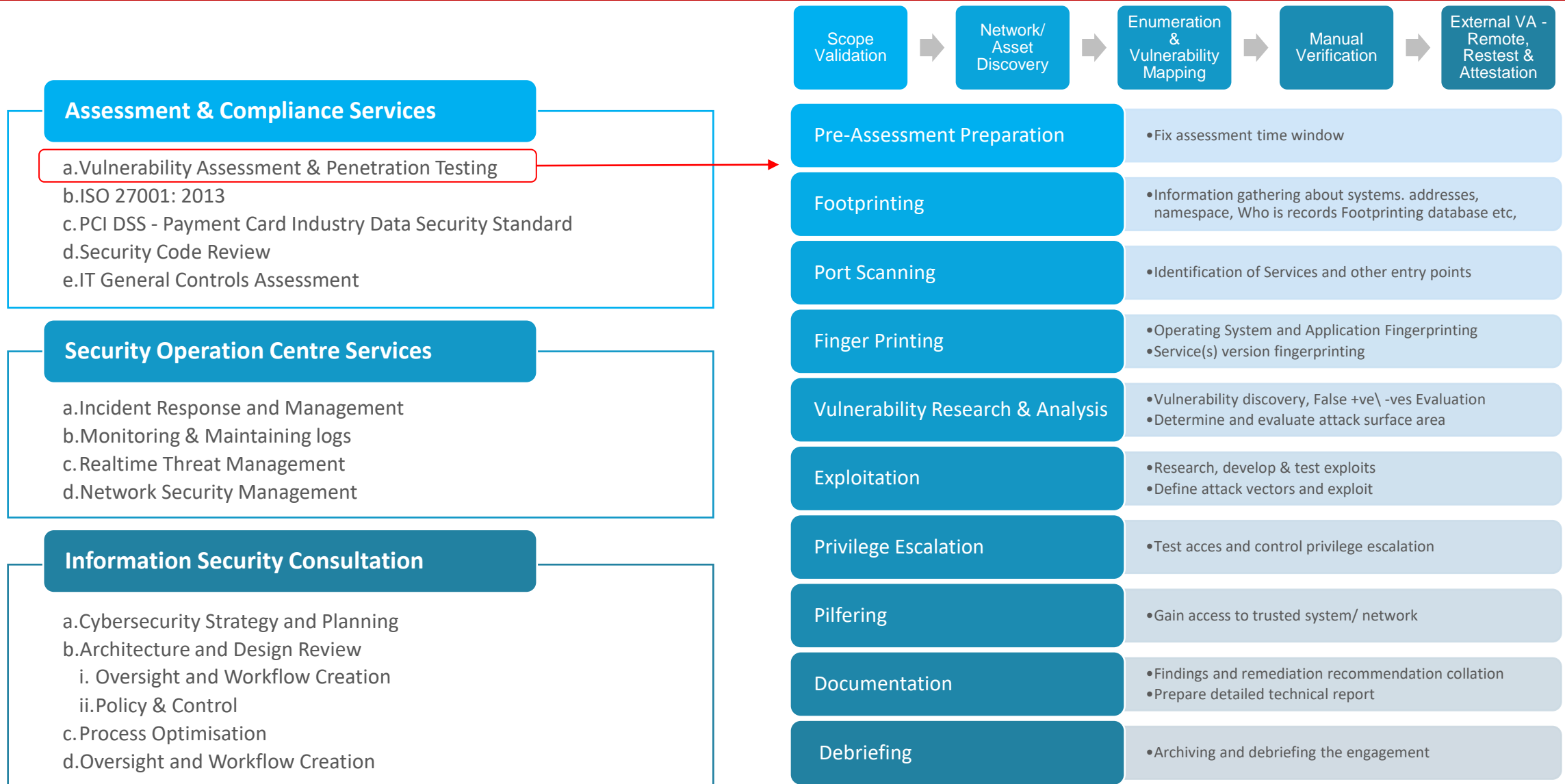
18. Backup Creation

19. Website Migration from any platform to Azure

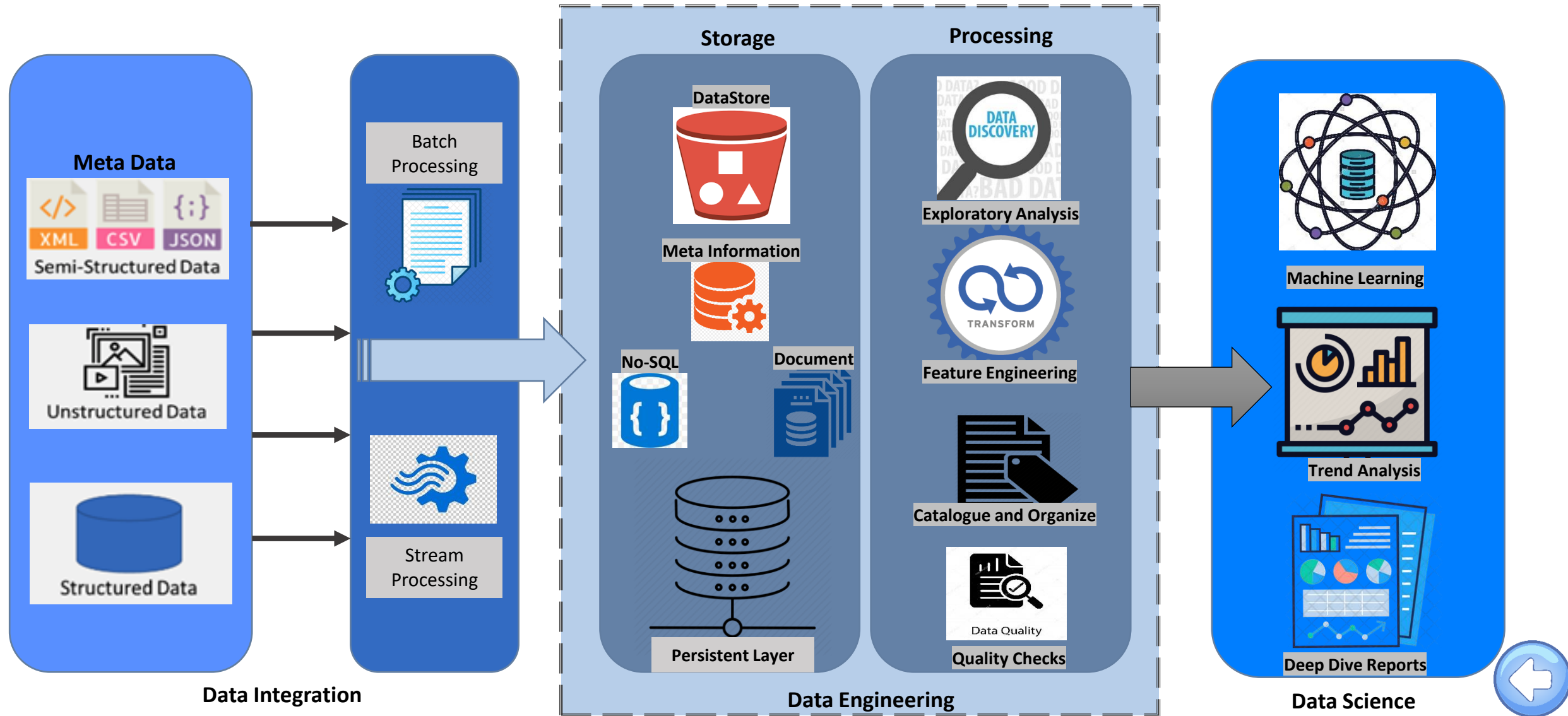
20. Infrastructure to cloud serverless migration



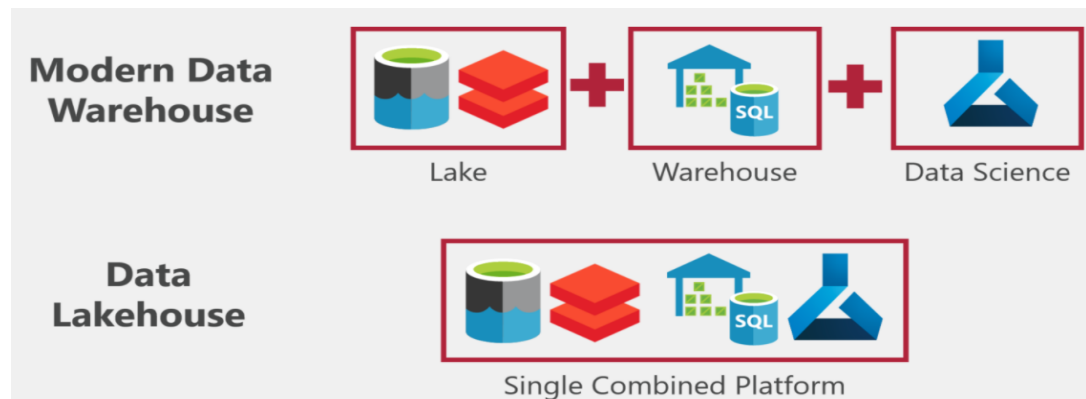
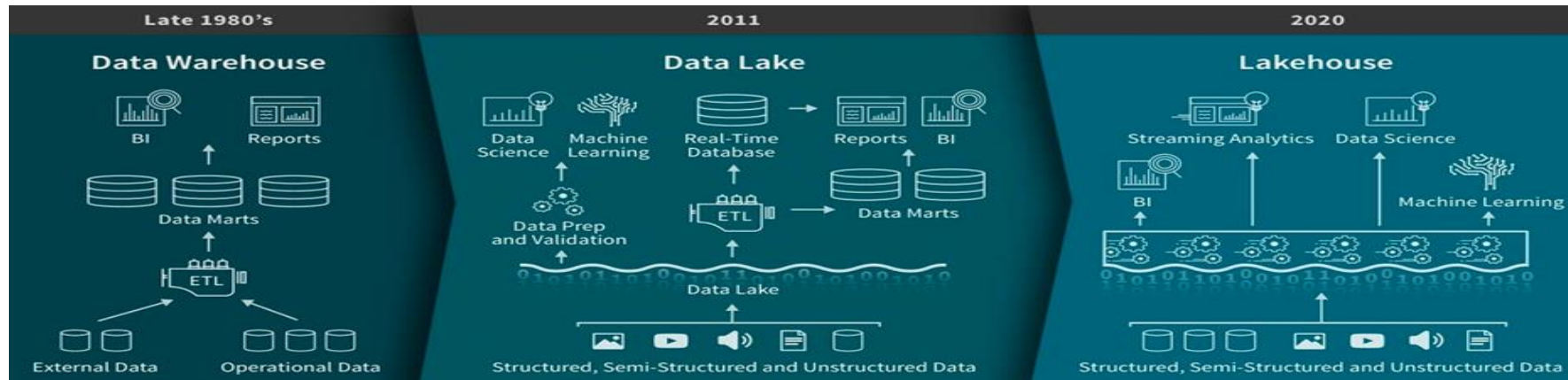
Cybersecurity



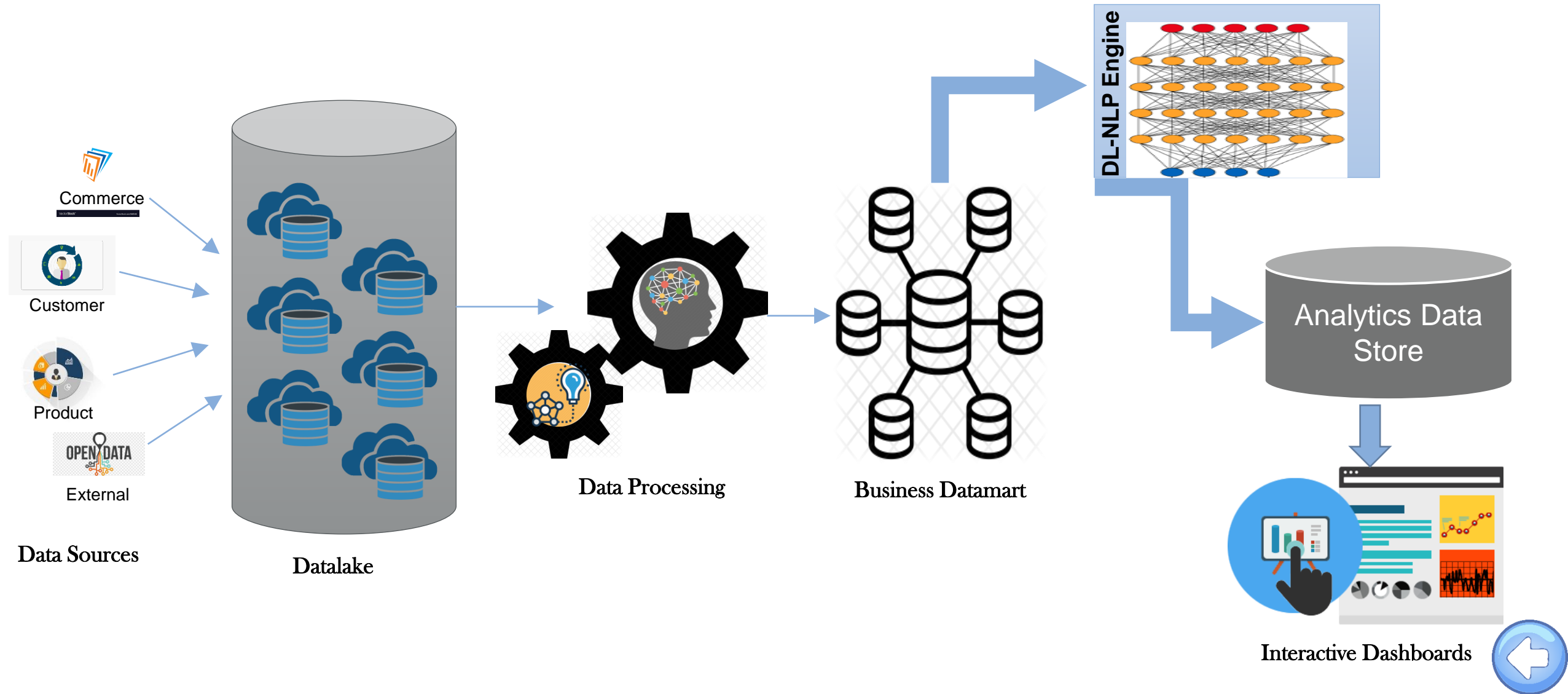
Data Engineering Framework



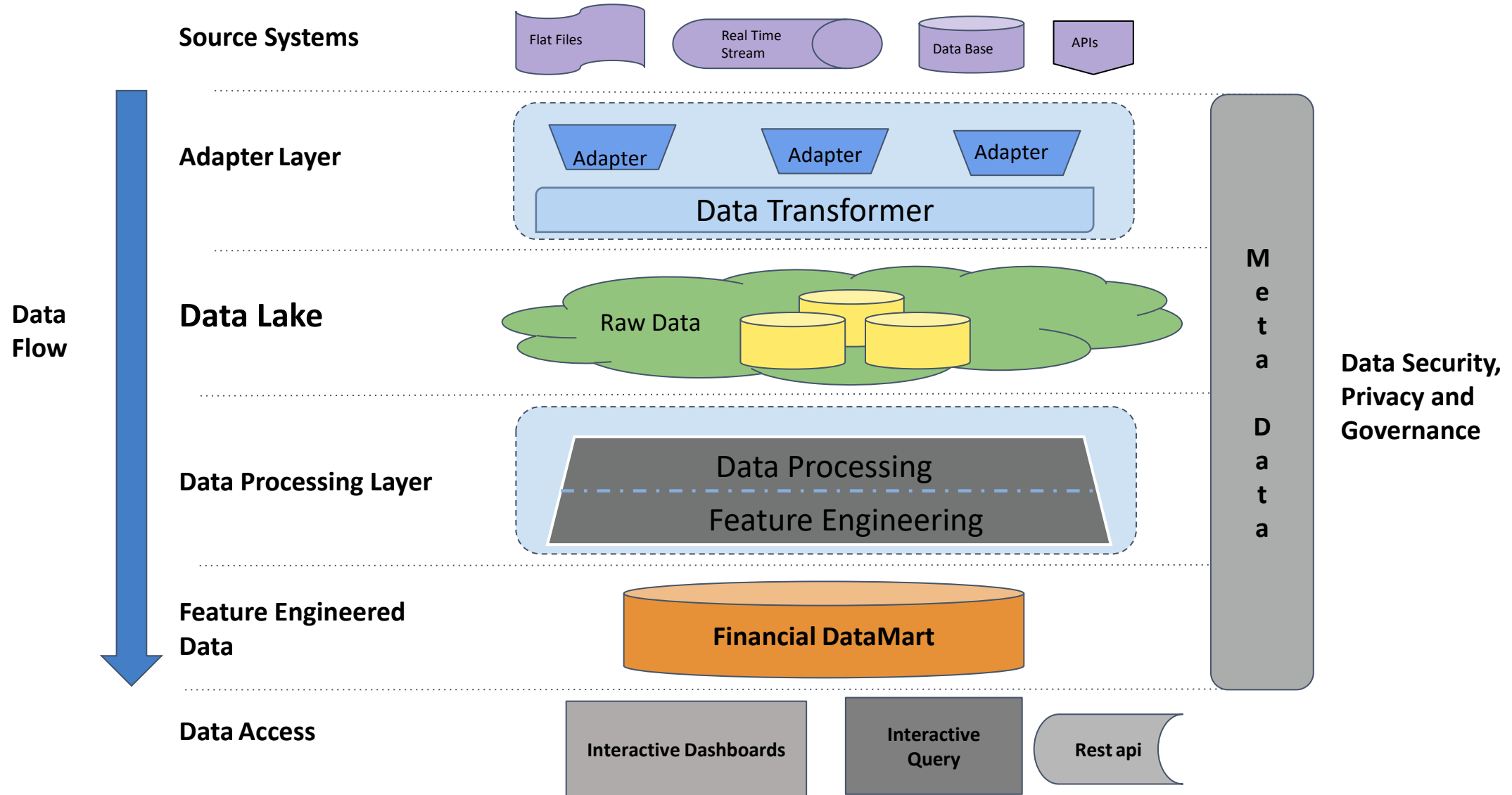
Big Data Evolution to Lakehouse



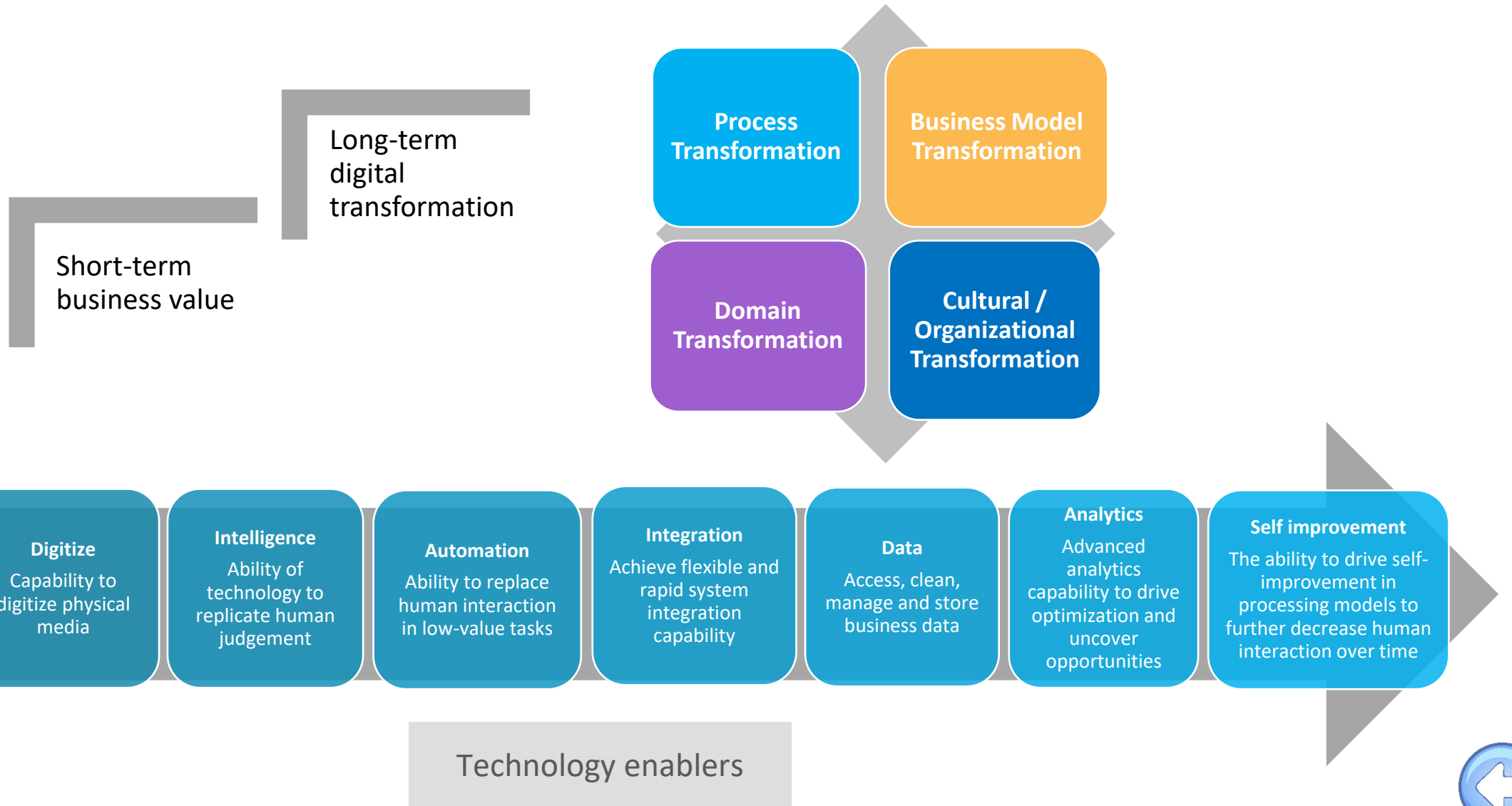
Data Architecture



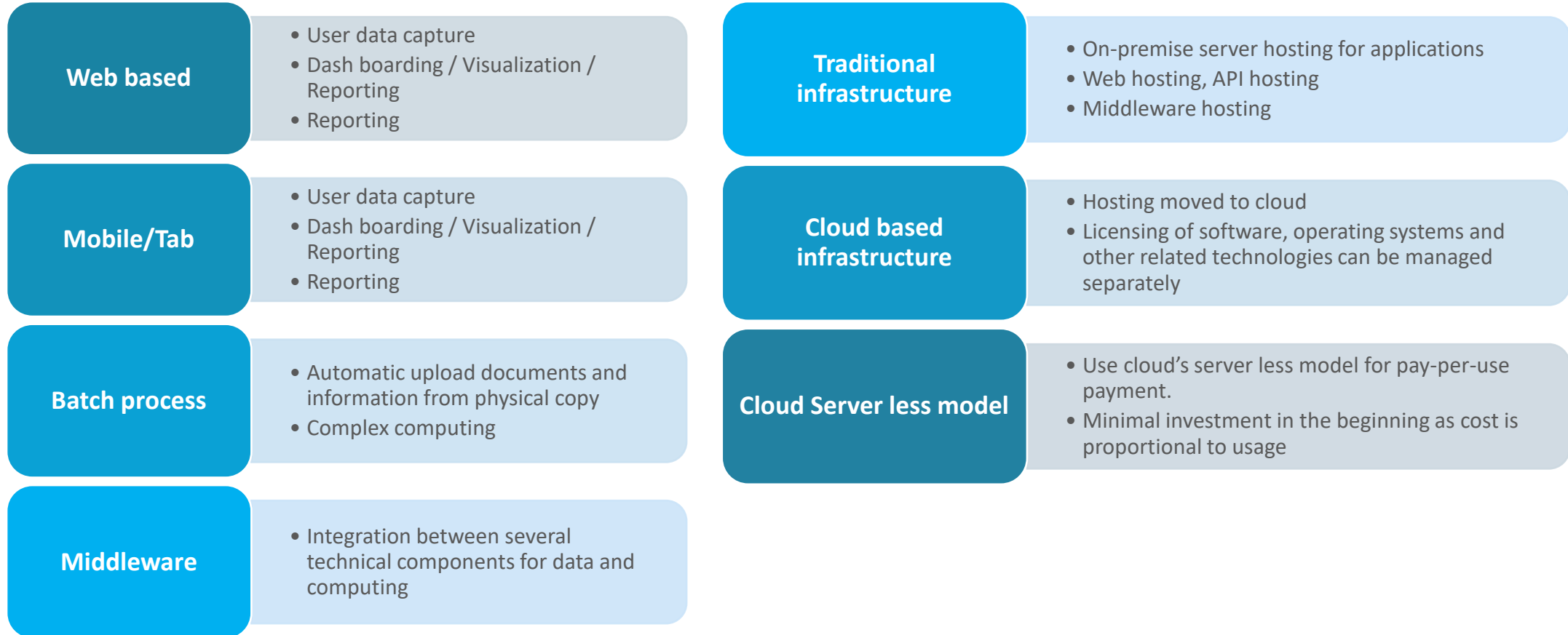
Data Platform Architecture



Digital Transformation



Digital Transformation Infrastructure



Digital Transformation Technologies

Front end

- Web -
 - Angular 10 – Major front-end technology
 - React
 - Bootstrap 4
 - HTML 5
 - LESS and CSS3
- Mobile
 - Ionic 5 – Framework for mobile
 - Bootstrap 4 – For styling
 - Angular 9
 - Capacitor/Cordova – For accessing device features
 - React native
 - LESS and CSS3

Back end

- Amazon EC2 server – Deployment server for Web client
- Rest API exposed via AWS API Gateway – Front end connects with backend
- AWS Lambda – Business logic implementation layer
- Node JS/Python – For implementing business logic in AWS Lambda
- Java, spring, ORM (Hibernate)
- Laravel

Storage

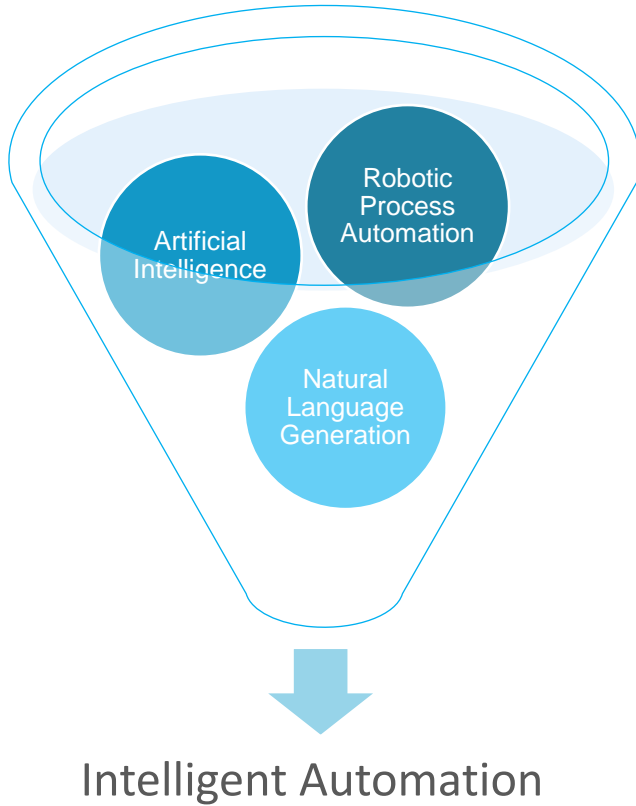
- MongoDB – For storing metadata and resources
- AWS S3 – For file storage
- MySQL, SQL server, Oracle

Third party integration

- Messaging service
- Email Service
- Payment Gateway
- AWS IAM – User and session management
- AWS CloudWatch – For logs and audits
- AWS Cloudflare – For static content delivery
- AWS Elemental – For video, chat and any other media service



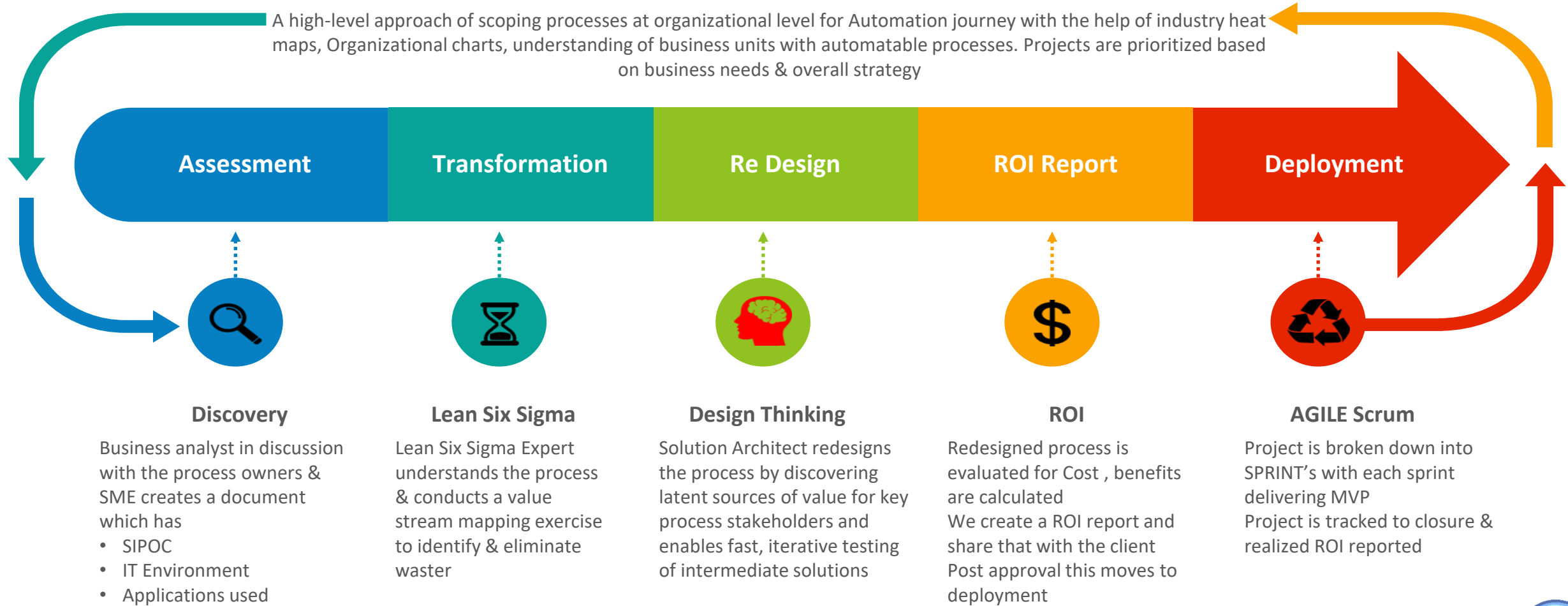
Intelligent Automation: Automation Bots & Chat Bots



Automation Process

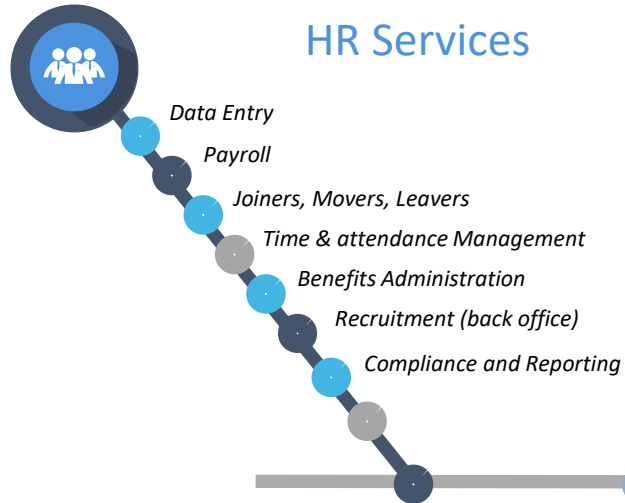
Automation Management

A high-level approach of scoping processes at organizational level for Automation journey with the help of industry heat maps, Organizational charts, understanding of business units with automatable processes. Projects are prioritized based on business needs & overall strategy



Intelligent Automation Applications

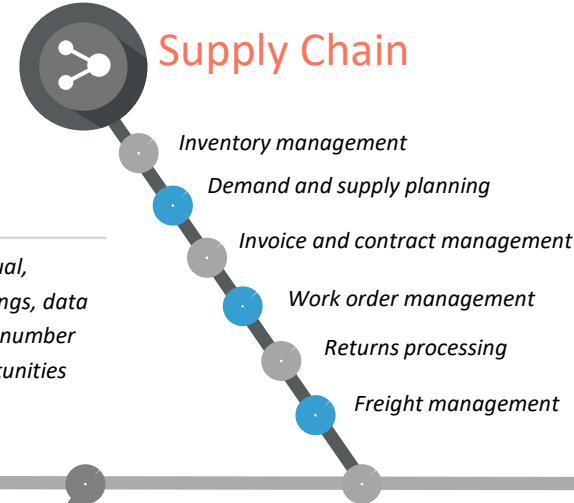
HR Services



HR Services

Due to the huge amount of repetitive, often manual, administrative tasks, under the shape of form fillings, data capturing, updating and disseminating and large number of request processing, HR is a gold mine of opportunities for automation

Supply Chain



Supply Chain

Supply chain problems cost companies between 9-20% of their value over a period of 6 months. Below processes are typically prone to automation and represent typical area of improvement in any supply chain operations.

Finance & Accounting

F&A is another area where automation can have significant positive impact on cost savings, improved efficiency and streamline processes, when applied



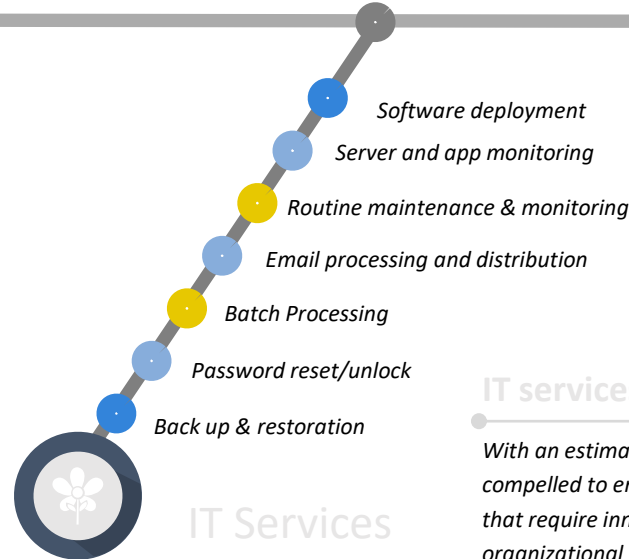
Finance & Accounting

Other areas for automation

Automation opportunities are practically ubiquitous in any organization. Besides typical horizontal services, there are other organizational activities that can fall easily under the scope of any automation strategy

IT services

With an estimated 30% of time spent on low level tasks, IT is compelled to embrace automation as a way to focus on the initiatives that require innovative thinking and be able to tackle with the critical organizational tasks currently consuming much of their time.



IT Services

Managed Services – Datacentre

Objective

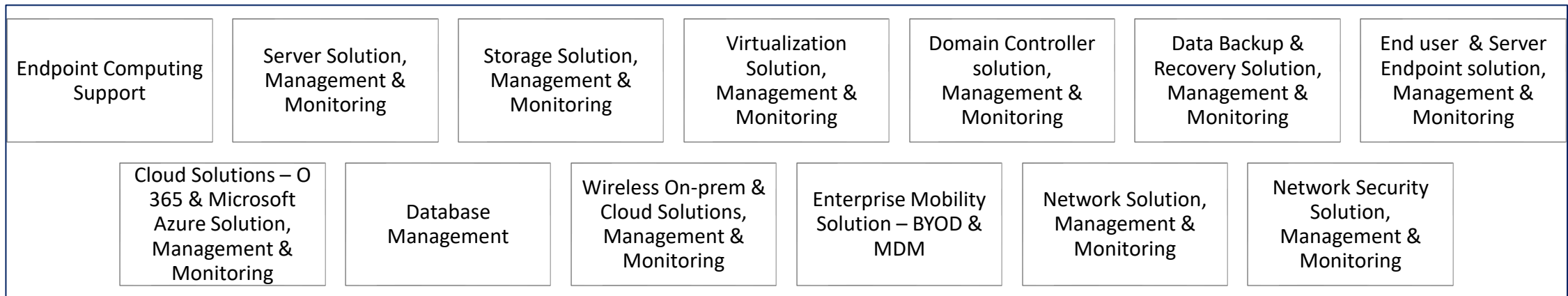
- To manage and monitor data center infrastructure elements
- Includes server, storage, OS, network, database, backup and other DC operations
- Use automation tools to deliver efficient services
- Ensure continuous delivery without disruption.

Scope

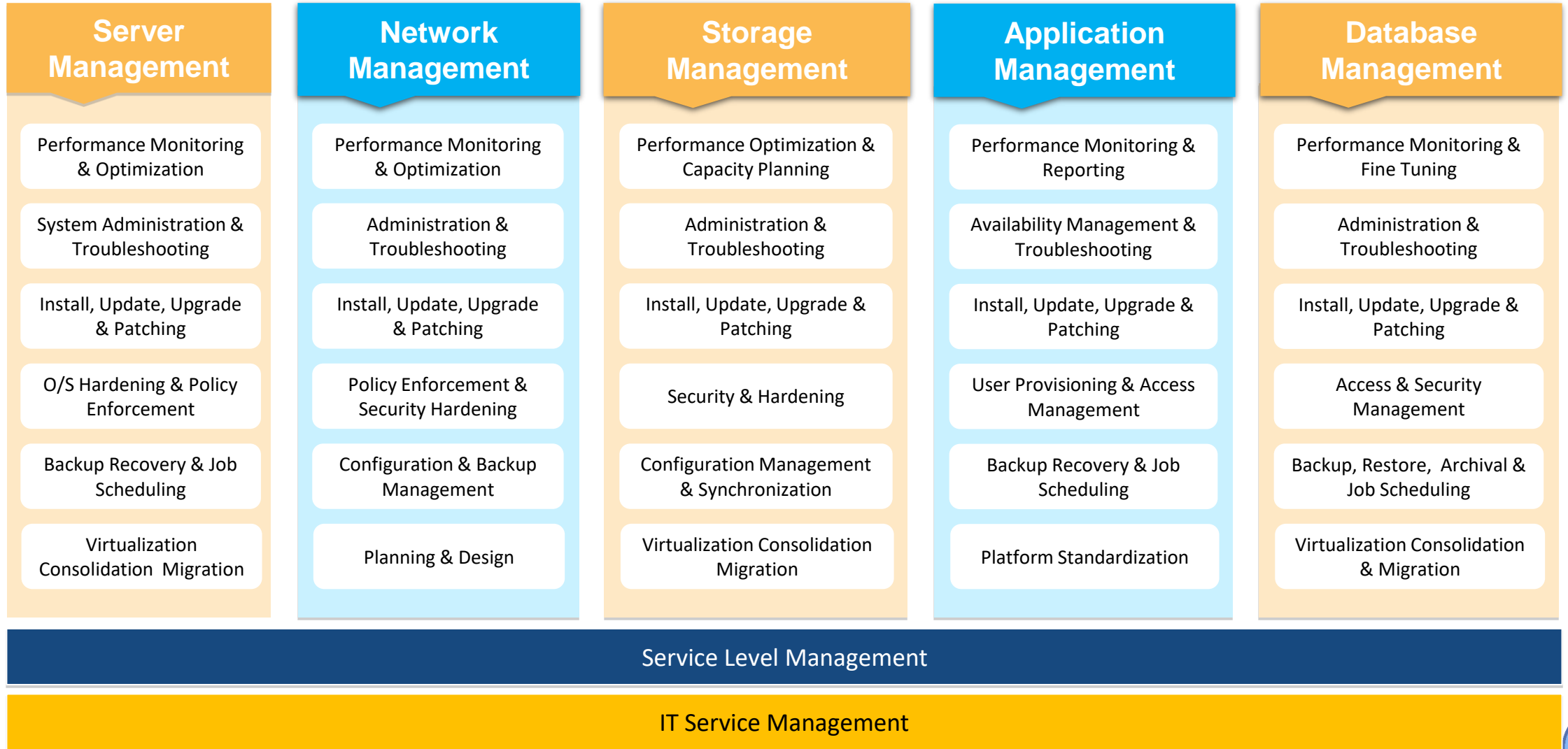
- Data center management
- Server management
- Platforms support
- Database management
- Backup and restore management
- Network management
- Physical and logical security management
- Process compliance

Business Value

- Continuous delivery with improved business SLAs
- Higher customer satisfaction
- Predictable IT operations cost
- Agility and robustness for continuous delivery
- Flexible support and pricing model - 9x5, 9x9, 24x7 etc.
- End to end SLA management
- Productivity improvement year-on-year - with automation and left shift



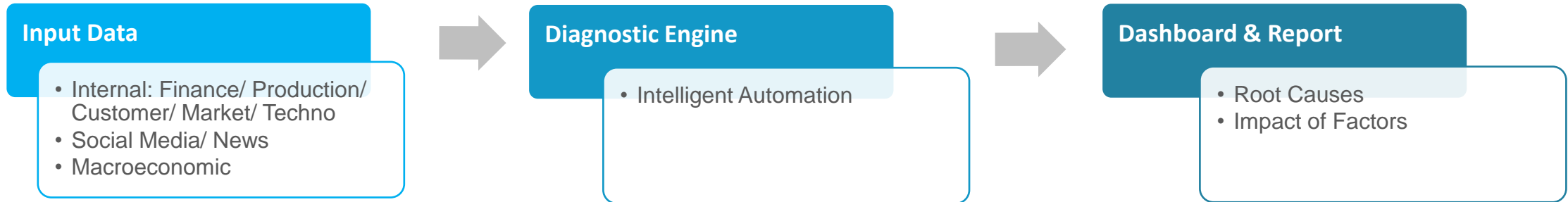
Portfolio of Datacentre Services



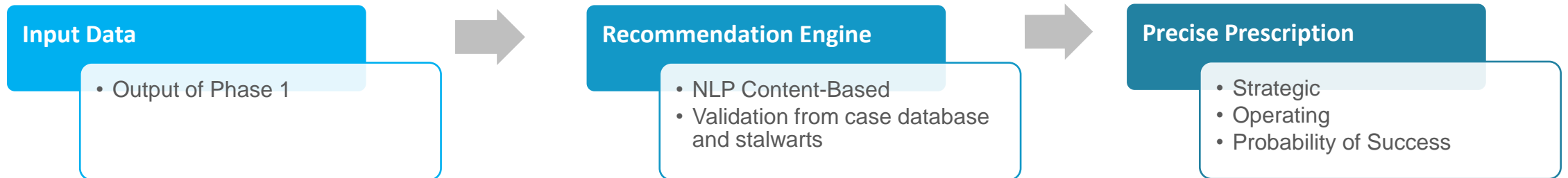
Management Consultancy – Intelligence Amplification (IA)

Strategy Development

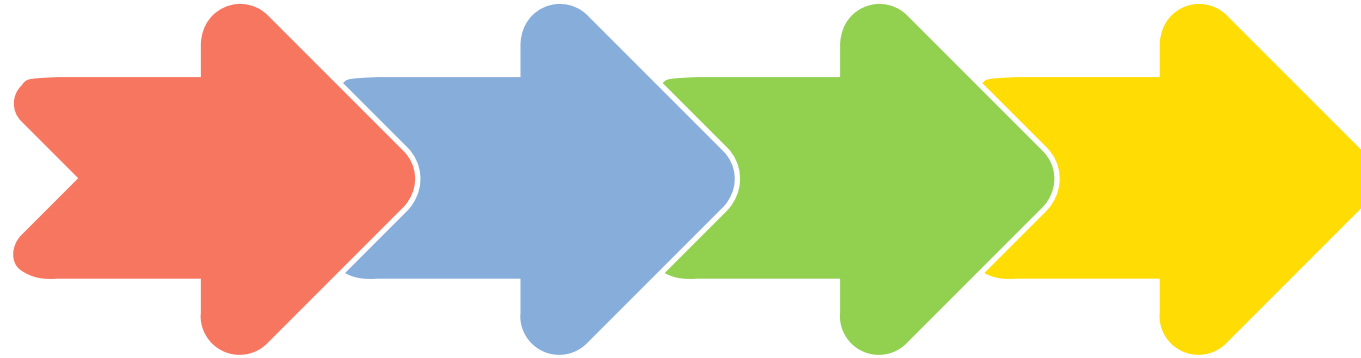
Phase 1: Diagnostic & Descriptive Analytics



Phase 2: Predictive & Prescriptive Analytics



The Process

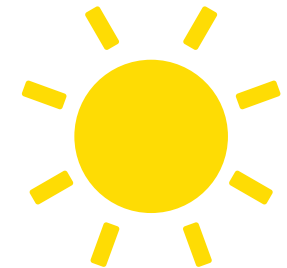


01 **Business Problem Identification**
Use-Case & Relevant Data

02 **Proposal Submission**
Solution with technical & commercial details

03 **Commencement of the Project**
On acceptance of the proposal

04 **Realize the Benefits**
ROI 5X-10X



Why Tuhin AI Advisory



Real Time Solution

Automated models will keep generating real time solutions



ROI Driven

At least 5X-10X;
Think Big & Start Small,
Unmatched value



Robust Framework

Multiple approaches to assess a problem driven by research questions from different perspective



Multiple Advanced Algorithms

Multiple algorithms applied to solve each business problem to gain a holistic perspective



Dr. Tuhin Chattopadhyay
T H E T H I N K E R

Thanks