

# Artificial Intelligence and Analytics **Playbook**

**Methodology and approach**





What you'll  
find inside

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Quick recap:  
Analytics & AI  
Transformation

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How to use this  
playbook:  
Step-by-Step

2

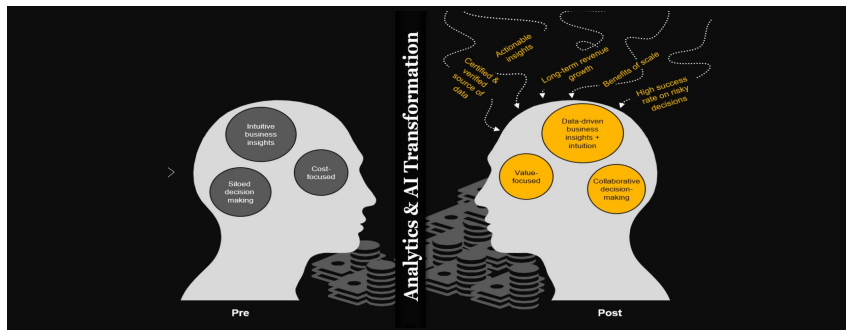


# Quick Recap: Analytics & AI Transformation

# We help clients realize significant business value by transforming their analytics capabilities using a collaborative design-to-value approach

## WHAT DO WE DO?

We help clients reimagine their analytics capabilities and change their organizational mindset while delivering desired business objectives



## HOW DO WE DO IT?

We do so using a collaborative and agile “Design-to-Value” approach that involves parallel tracks for targeted capability building and execution of prioritized use cases



## WHAT DOES IT RESULT IN?



Revenue Growth



Cost Reduction



Risk Management



Competitive Advantage

We leverage our holistic six-dimensional framework that balances technology transformation and human engagement to support analytics and AI capabilities

#### 6. Culture & Talent

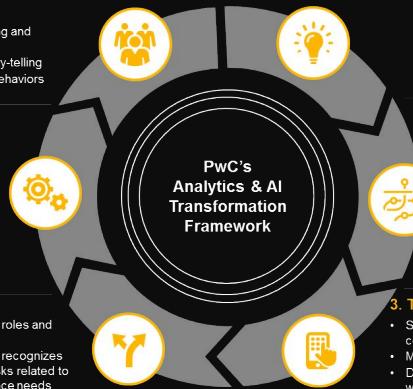
- Develop Data Science, Data Engineering and Product Management skills
- Introduce new skills in analysis and story-telling
- Design mechanisms to enable critical behaviors that support cultural transformation

#### 5. Process & Integration

- Be agile and focus on value creation
- Streamline metrics and improve interactions between analytics teams and business owners

#### 4. Organization & Governance

- Develop operating model with clarity on roles and responsibilities
- Develop and organization structure that recognizes and mitigates human and technology risks related to data sharing and/or regulatory compliance needs



#### 1. Business Decisions & Analytics

- Align with corporate and business unit strategy
- Identify and prioritize core business use cases
- Leverage next generation AI techniques to drive business value

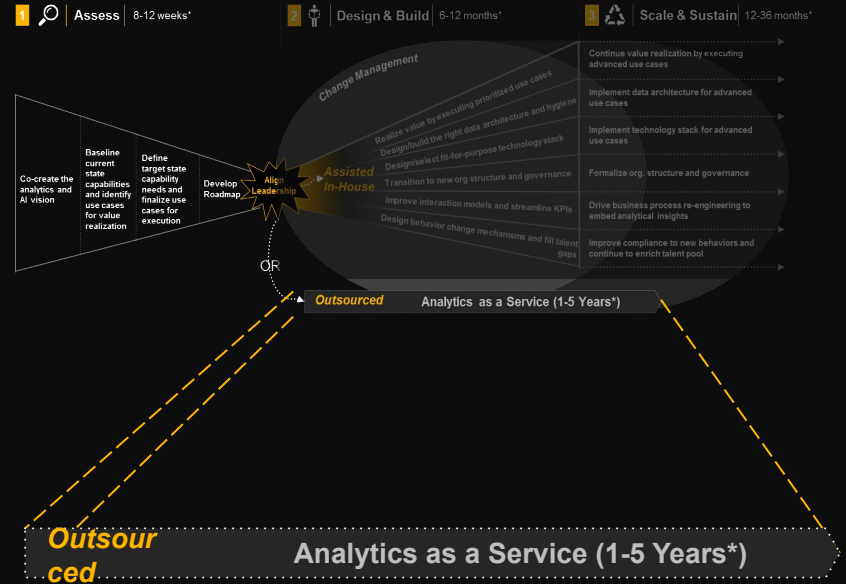
#### 2. Data & Information

- Extract and store unstructured and large volumes of data
- Integrate external/3<sup>rd</sup> party data
- Enable real-time data processing
- Secure data and manage privacy

#### 3. Technology & Infrastructure

- Select scalable, open source platforms that address complete analytics ecosystem
- Modernize platform to enable Artificial Intelligence
- Develop digital, user-centric applications for mobile, web and enterprise

At the end of the 'Assess' phase, if leadership decides to outsource analytics capability, we help with 'Analytics as a Service' offering that is outlined in this playbook



# How are we delivering value differently?



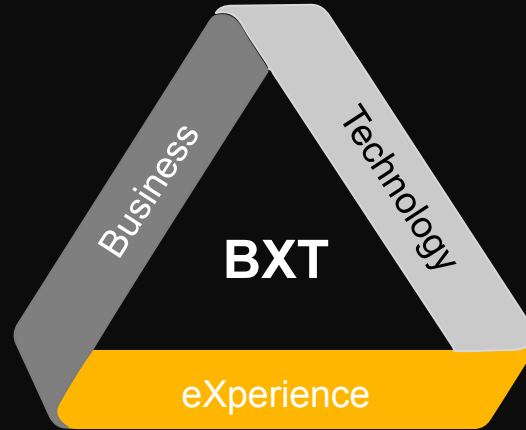
Generating business value through identifying, prioritizing and executing high value use-cases is at the heart of our approach



In the short run, we demonstrate value realization through execution of prioritized use-cases



In the long run, targeted investment in capability building enables self-sufficiency for clients whereby they can execute complex use-cases themselves



We organize interactive workshops to design fit-for-purpose technology and data architecture for prioritized use-cases



We follow agile principles of “Think it. Build it. Run it. Again.” in building technology solutions and iterate frequently



We tailor the roadmap based on the client’s starting-point, ambition and aspirations



Our approach augments human intelligence with tech-enabled advanced analytics to deliver custom data/technology experiences for client stakeholders



We conduct a culture diagnostic to identify key critical behaviors (formal + informal) that will foster analytics adoption and implement a comprehensive change management plan to support it



We work in joint teams and bring PwC assets and knowledge-base to accelerate the journey



Through the course of this phase, we will systematically design opportunities to introduce magic moments

Magic Moments **elicit emotional reactions** that drive powerful transformations, exciting and delighting our clients and teams

## Inspiration



Allow us to imagine the future and provide visibility into the possible

By bringing PwC assets and experience to bear in thinking outside the box

## Discomfort



Takes us out of the norm and push us out of complacency with bold ideas and insights

By sharing the long and difficult road ahead and highlighting gaps

## Empowerment



Enables us to act and make informed decisions through clarity and realization

By making them the owner and co-creator and iterating with them

## Love



Builds personal connections, create meaning, and foster relationships

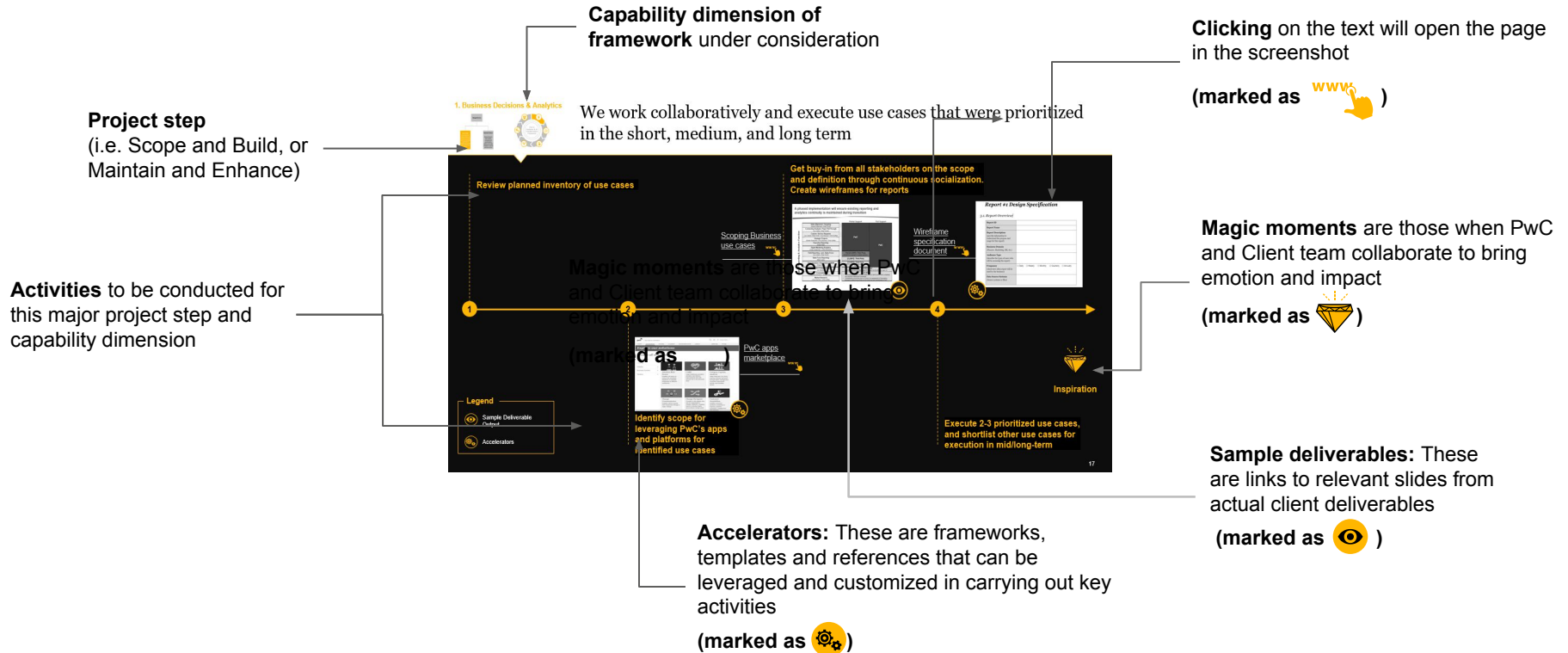
Rewarding right behaviors and celebrating wins



# How to Use this Playbook?



# This playbook is a living document offering that details the steps, activities, sample deliverables and accelerators for each of the six dimensions



# Analytics & AI Managed Services







Detailed phase-wise  
key activities


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This phase involves executing on the initiatives identified by the client required to outsource their analytics activities at the end of the 'Assess' phase

ILLUSTRATIVE

Dimension	0-6 months	6-12 months	12-18 months	>18 months
 <b>Business Decisions &amp; Analytics</b>	Scope and execute prioritized use cases	Scope and execute AI based solutions		
	Initiate pilot runs for validation	Operationalize prioritized use cases	Operationalize advanced use cases	
 <b>Data &amp; Information</b>	Support the prioritized use cases	Data quality and gap assessment		
		3rd party data selection (Optional)	Routine data refresh, maintenance, and upgrade activities	
 <b>Technology &amp; Infrastructure</b>	Support prioritized use cases with available technology	Customize technology architecture		
		Technology vendor selection for augmenting tech stack	Make technology stack enhancements to support advanced AI techniques. Carry out routine maintenance activities.	
 <b>Organization &amp; Governance</b>	Build operating model	Design the analytics governance structure		
		Operationalize operating model	Institute routine AI, risk and validation governance	
 <b>Process &amp; Integration</b>	Develop detailed design of interaction model	Institute process for analytics intake and demand management		
		Define KPIs and success criteria	Track value generation and embedding analytics in BUs and FUs	
 <b>Culture &amp; Talent</b>	Assemble the right PwC team	Augment and rotate staff as required		
		Implement behavior change	Measure and review the behavioral and cultural change	

 - Design & Build

 - Scale & Sustain

# We work collaboratively and execute use cases that were prioritized in the short, medium, and long term



Review planned inventory of use cases

Get buy-in from all stakeholders on the scope and definition through continuous socialization. Create wireframes for reports

Scoping Business use cases



A phased implementation will ensure existing reporting and analytics continuity is maintained during transition.

	Partial Support	Full Support
Basic Reporting (Reports)	Full	Full
Complex Reporting (Dashboards)	Full	Full
Custom Ad Hoc Reports	Full	Full
Advanced Reporting (Interactive Dashboards)	Full	Full
Self-Service Reporting (Ad Hoc Reports)	Full	Full
Self-Service Reporting (Interactive Dashboards)	Full	Full
Self-Service Reporting (Ad Hoc Reports)	Full	Full
Self-Service Reporting (Interactive Dashboards)	Full	Full
Self-Service Reporting (Ad Hoc Reports)	Full	Full
Self-Service Reporting (Interactive Dashboards)	Full	Full

Wireframe specification document



Report #1 Design Specification

3.1. Report Overview

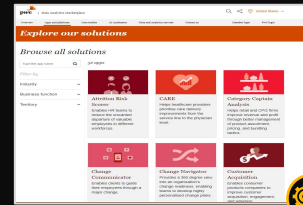
Report ID	
Report Name	
Report Description	Provide information to understand the purpose and scope for the report.
Business Domain	(Finance, Marketing, HR, etc.)
Audience Type	(Describe the type of users who will be viewing the report)
Frequency	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Annually
Data Source Systems	(Source system or Data)

1

2

3

4



PwC apps marketplace



Identify scope for leveraging PwC's apps and platforms for identified use cases

Legend

- Sample Deliverable Output
- Accelerators



Execute 2-3 prioritized use cases, and shortlist other use cases for execution in mid/long-term

# We use proven methodologies to build analytical and AI models incrementally, that incorporates end user feedback at all phases of development

## List of Activities

### Deployment

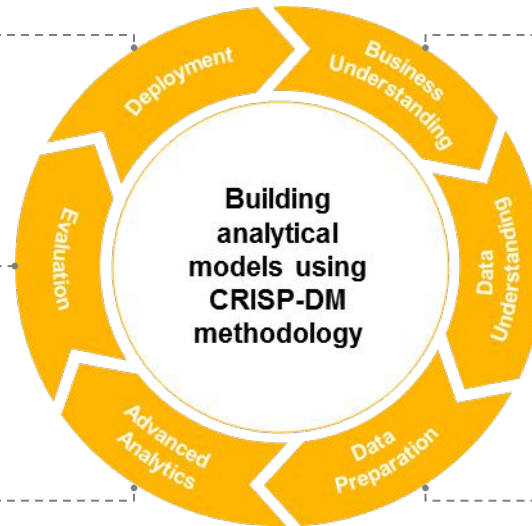
- Define mediums for activation (data infrastructure), dissemination (model runs) & consumption (visual interaction layer & pass feedback
- Operationalize mediums, document decision end-points, process owners, and model limitations.
- Go/no-go checklist to determine sunset or next pass iteration

### Evaluation

- Thoroughly evaluate models, document steps executed to construct, and validate against Business Objective Dictionary. Identify any important business issues NOT sufficiently considered
- Pre-Pilot results with business, carefully craft samples for evaluation. Document sampling methodology & results
- Re-run Advanced Analytics phase for model calibration as needed. Document chronology and rationale for choosing a stopping point

### Advanced Analytics

- Primary and secondary modeling techniques are selected and applied, their parameters calibrated to optimal values. Additional techniques are optional
- Documentation of model diagnostics & scientist interpretation. Some techniques require specific requirements on data, update Model Data Dictionary as needed



## List of Activities

### Business Understanding

- Interview executive sponsors defining problem & their ideas for success and identify key players
- Formalize data mining problem definition & preliminary plan designed to achieve the objectives and develop a decision model using decision model & notation standard

### Data Understanding

- Conduct exploratory data analysis (EDA) – (Obtain, Draw, Perform, Stop, Count, Seek, React or Respond, Ask, Try, Choose)
- Document data quality problems & insights into data. Detect interesting subsets and form data driven hypothesis – consult with business and document process driven hypothesis

### Data Preparation

- Table, record and attribution selection as well as transformation & cleaning of data for modeling tools
- Have clear documentation of imputed variables & expected relevance

# We use a standardized methodology for reporting capability development as well which relies on feedback from business units and functional units

## Business Strategy Alignment

- **Interview executive sponsors** defining the requirements and success criteria
- **Formalize the report development plan** for meeting the required objectives



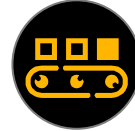
- Conduct a **data gap analysis** for the required business objectives and raise data procurement request
- Conduct **exploratory data analysis (EDA)** – (Obtain, Draw, Perform, Stop, Count, Seek, React or Respond, Ask, Try, Choose)
- Document data quality problems & insights into data



## Data Procurement and Understanding

## Report Deployment

- Define mediums for activation (data infrastructure), dissemination (report runs) & consumption (visual interaction layer & pass feedback)
- Operationalize mediums, user guides, process owners, and report limitations
- **Track consumption** and/or business relevance to **determine phasing out or redesign**



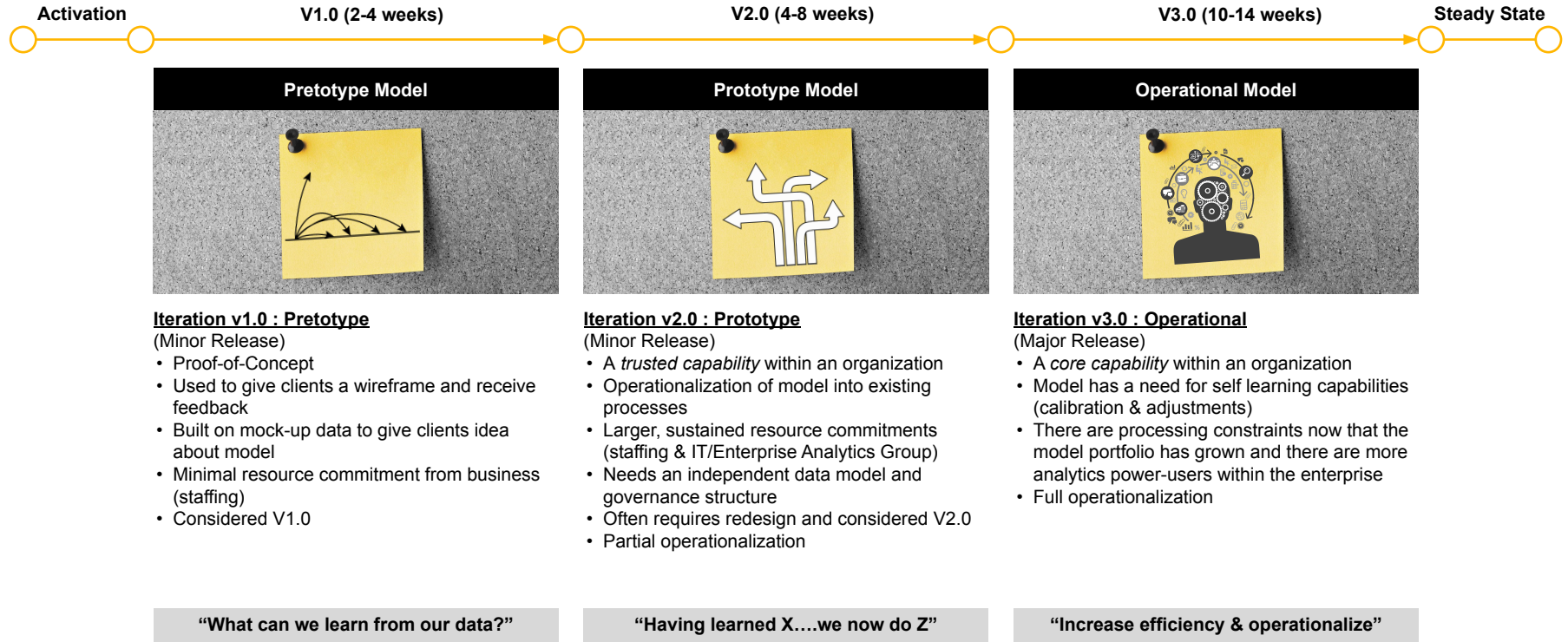
- Develop **prototypes and prototypes** for business alignment
- **Run pilots** for user testing and add modifications as necessary
- Document the flow of data, information and processes



## Report Development



# Analytical model development typically goes through three phases to reach steady state





## 2. Data & Information



# We then set up the data acquisition and management processes to enable analytics activities

1 Inventory data sets by domain and team. Identify data sets to be ingested and managed. Identify core systems that will intake data feeds

3 Ingest, aggregate, quality-check and integrate enterprise and 3rd party datasets. Prepare conceptual/logical data models. Establish single source of truth for data needs

5 Throughout the data lineage, ensure data security through encryption at rest, encryption at transit, access control, input validation and data monitoring

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### Legend

 Sample Deliverable Output

 Accelerators

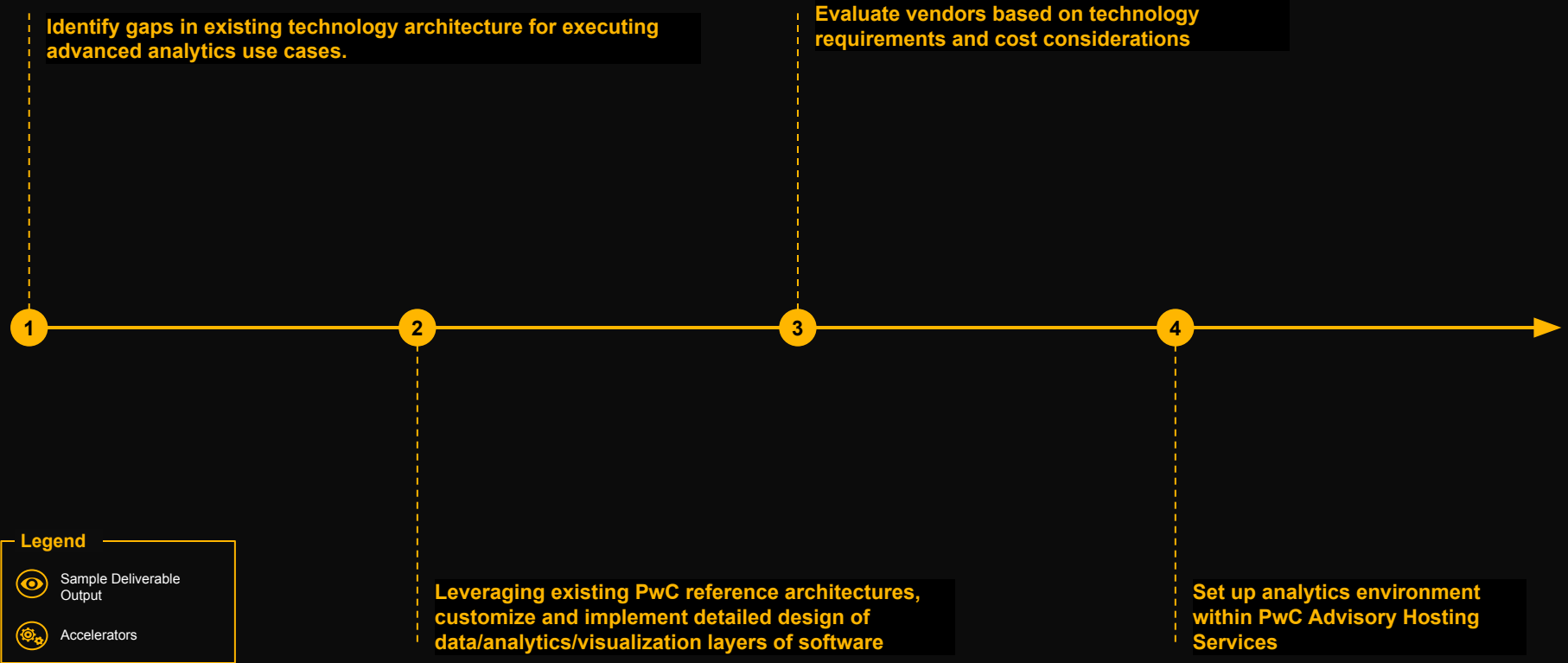
2 Data Licensing and Acquisition – License 3<sup>rd</sup> party data software. Develop data transfer protocols

4 Develop data quality rules, data definitions, business glossaries and taxonomy to profile data and remediate data quality

### 3. Technology & Infrastructure



We then design and implement the tech stack to enable use case execution aligning with the client's financial considerations





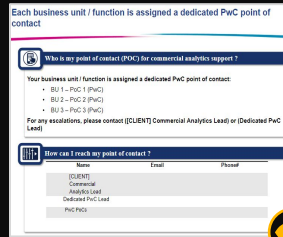


# We lay down the processes to enable execution of activities outlined in the roadmap

**Categorize request intake, prioritization and execution processes, differentiated by request types (e.g. ad hoc, report inquiry, anomaly, change request...)**

**Assign points of contact to business stakeholders by BUs/functional groups to cater to client requests**

**Activate process change and fine tune analytics solutions based on business feedback**



PwC point of contacts by BU/functional groups



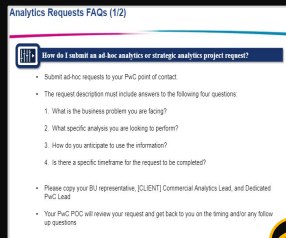
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Process for analytics requests



**Legend**



Sample Deliverable Output



Accelerators

**Establish KPIs, Service Level Agreements (SLAs), expected deliverables and outputs during the course of the engagement**

**Lay down detailed workflows for data ingestion, report deployment, insight delivery, etc.**





# ... and provide data science expertise to execute prioritized use cases and ensure adequate adoption through

Provide data science expertise to client's analytics requirements. Assign PwC teams with finalized workstreams. Set up appropriate staff rotation and incentive structures for PwC resources for longer term engagements

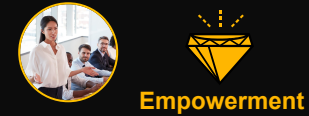
Socialize program with C-suite level executives to effect a change in traditional approaches and imbibe analytical thinking into decision making to build the right foundation



**Legend**

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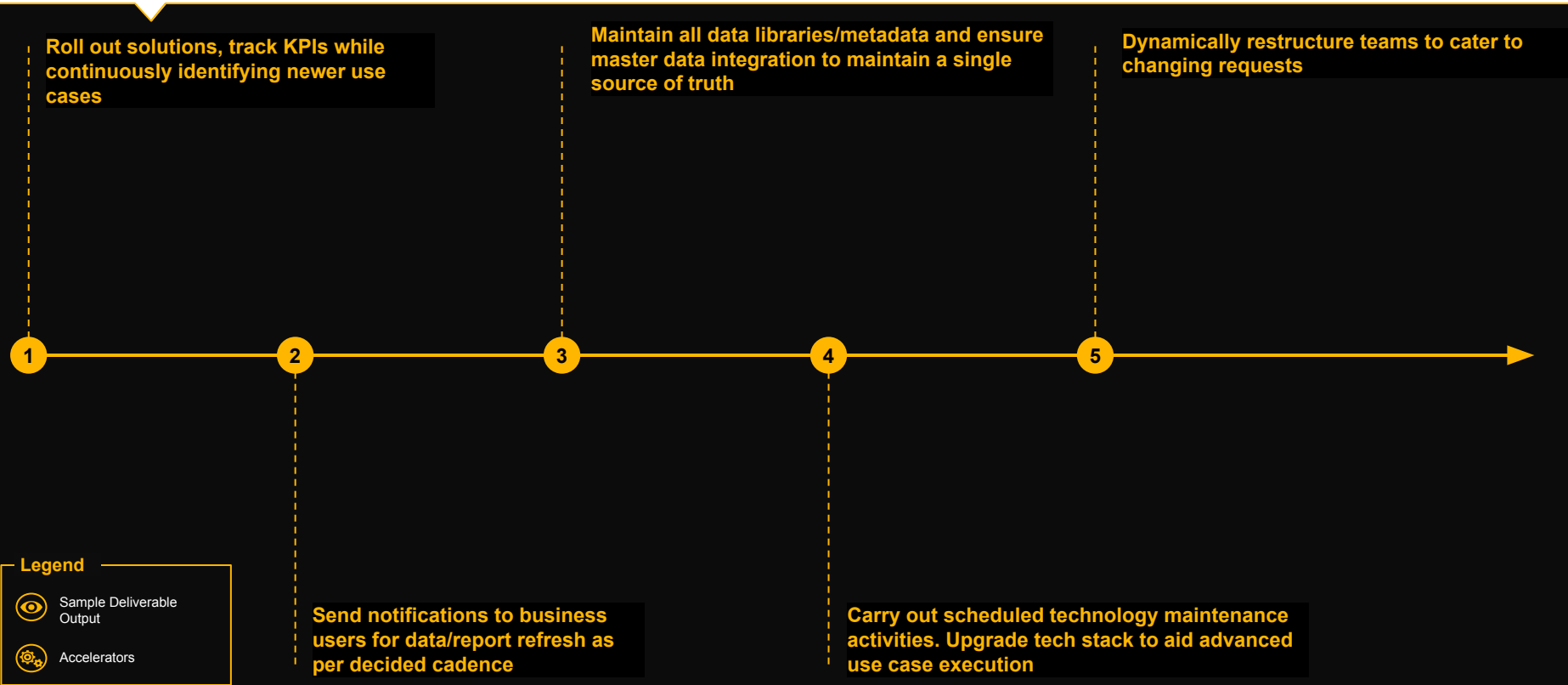
Ramp up client resources via trainings and co-development of use cases and solutions



Assign Analytics Data Champions - Responsible for key business insights generation, signal detection, process deviations mapping



# The second phase involves providing continued support on executed use cases and identifying new opportunities for analytics and AI (1/2)



**Legend**

- Sample Deliverable Output
- Accelerators



# The second phase involves providing continued support on executed use cases and identifying new opportunities for analytics and AI (2/2)

**SWAT team to focus on rationalizing reports, data sources, tools, etc. by constantly engaging with business stakeholders**

**Phase out the model after it has served the use case, or after pre-decided cadence, or once the model performance deteriorates beyond thresholds**



**Legend**

- Sample Deliverable Output
- Accelerators

**Analytics Data Stewards - Responsible for key day to day operations, generating reports, data job schedules, error handling and any quality/benchmark reports**

**Ensure that business stakeholders do not use stale models/reports**



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# Appendix.

# Our holistic framework balances technology transformation and human engagement

## 6. Culture & Talent

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- Be agile and focus on value creation
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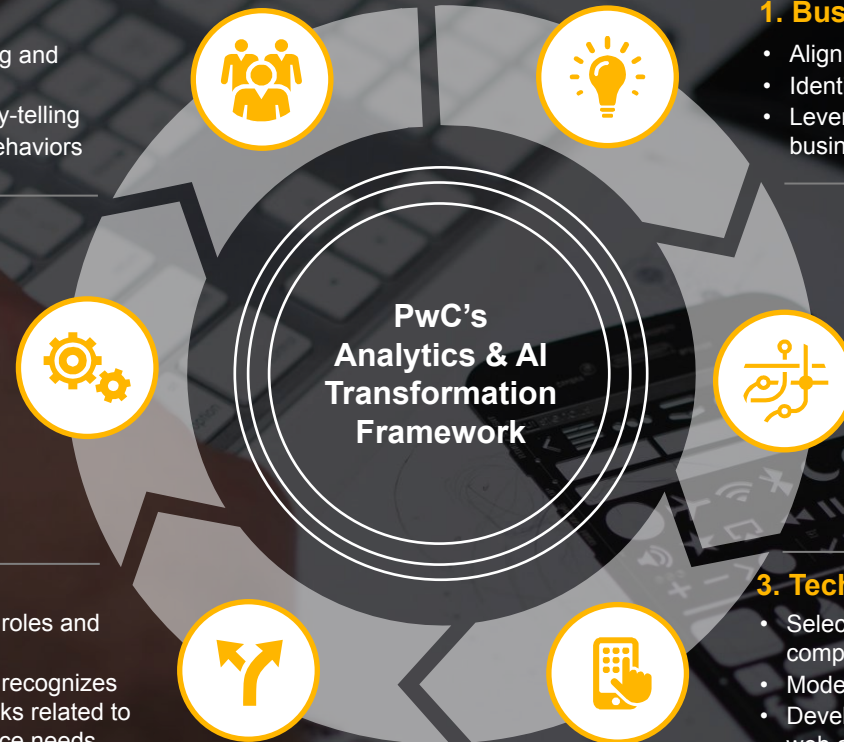
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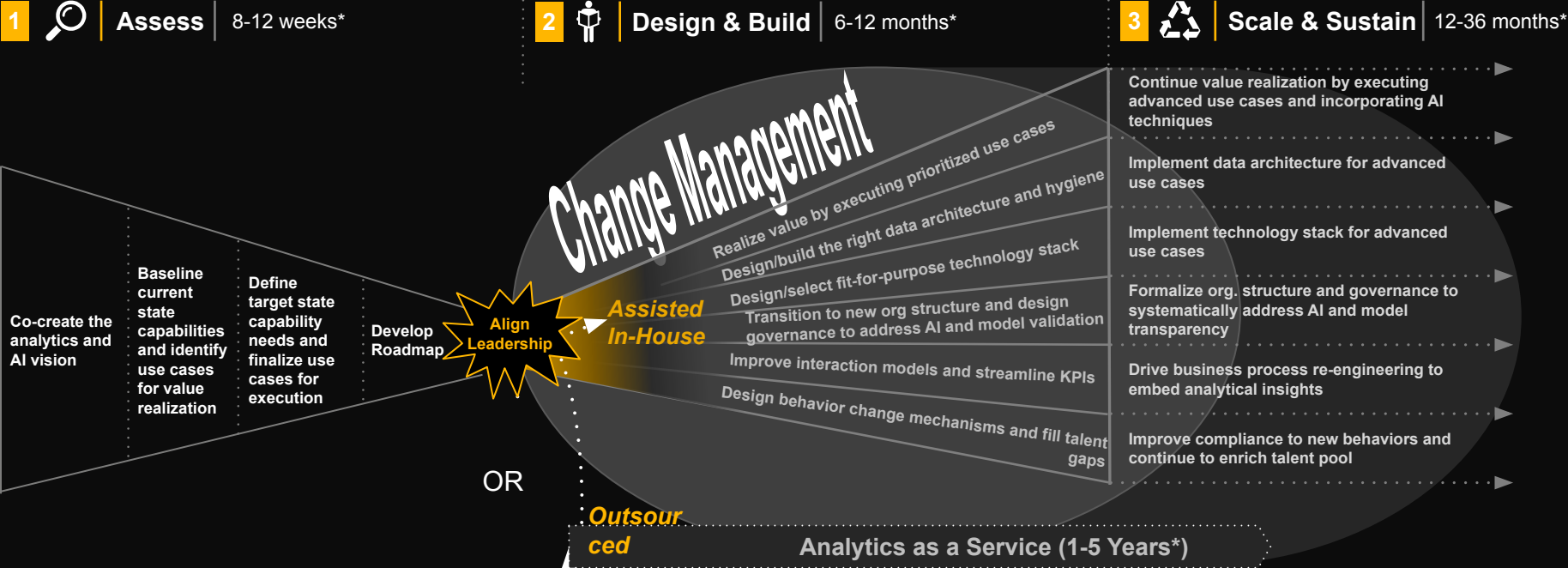
- Extract and store unstructured and large volumes of data
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## 3. Technology & Infrastructure

- Select scalable, open source platforms that address complete analytics ecosystem
- Modernize platform to enable Artificial Intelligence
- Develop digital, user-centric applications for mobile, web and enterprise



# Starting with your business strategy, we will co-create an analytics vision and execute it in 3 phases



Note: 1) A pilot proof of concept can be conducted to rapidly prove the value of analytics and AI

2) A hybrid model (In-House + Out-sourced) can be an option

\*Timelines depend on the scope being addressed in these engagements; the lower range reflects smaller business units, while the higher ones reflect enterprise capability



Alternatively, you have the option of outsourcing Phases 2 & 3 whereby we will help you deploy “Analytics as a service”

### Business Decisions & Analytics

Manage use cases end-to-end across business functions



### Data & Information

Leverage enterprise data along with 3<sup>rd</sup> party and PwC proprietary data to add value



### Technology & Infrastructure

Transform data to insights through mature insights platforms



Analytics as a Service | 1-5 years | *(Outsourced)*

### Organization & Governance

Identify key stakeholders to engage and leverage insights delivered



### Process & Integration

Form SWAT teams to embed analytics within functions and identify business processes to be replaced by analytical solutions



### Culture & Talent

Assist with on-going program and change management

