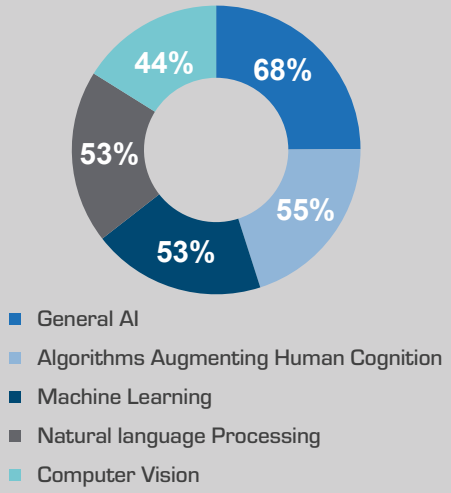
Tech Mahindra
BUSINESS PROCESS SERVICES

# Life-Sciences Evolving with Automation

Applicability and importance of Artificial Intelligence through Machine learning, Natural Language Processing, Deep Learning and Visual Recognition is well understood by Life-Science Industry. One of the slowest adopters of AI transformation, Life-Science industry is gaining steady momentum in transforming their R&D, Clinical Operations, Regulatory & Safety services and Post Market activities.

Augmented Intelligence over Artificial intelligence is the way Pharmaceuticals would want machines and systems to cooperate in clinical development. It will simply assist the experts make the most correct decisions instead of making the decision itself.

## Overall AI Utilization in Life-Science Companies from survey done on 174 companies

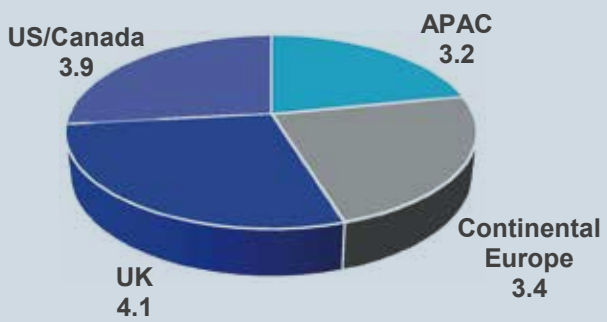



## Outsourcing Outlook in Life-sciences

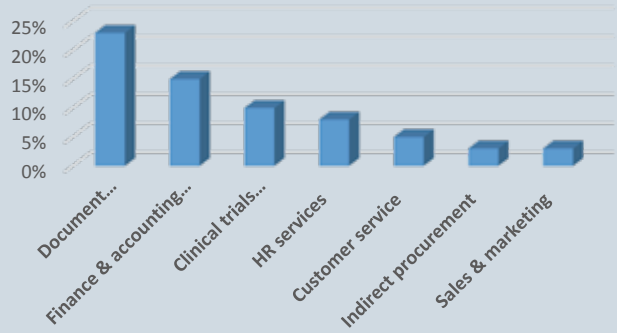
### Primary reasons for Pharmaceutical Outsourcing

| | | | |
|---|---|---|---|
| **23%** Entry in Emerging Market | **19%** Retaining existing Patients | **08%** Enhancing Business Agility | **11%** New Product Launch |
| **05%** New Product offer to Patients | **03%** Green initiatives | **21%** New Patient Base | **10%** Operational Cost Reduction |

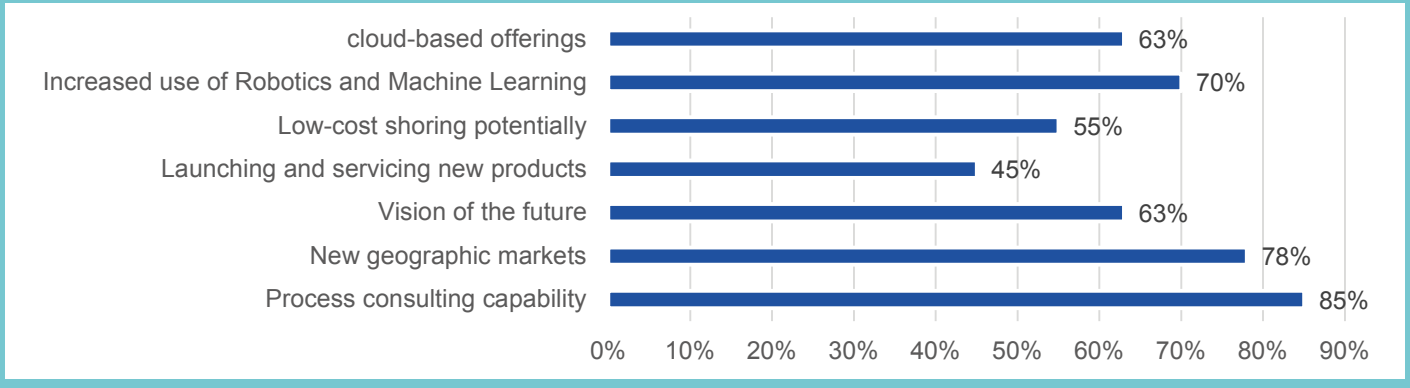
## Automation acceptance by Pharmaceuticals by Region. On a scale of 5




## Horizontal Services Outsourcing Pattern




## Capability acceptance by Pharma clients



## High Potential Process Choices for Transformation

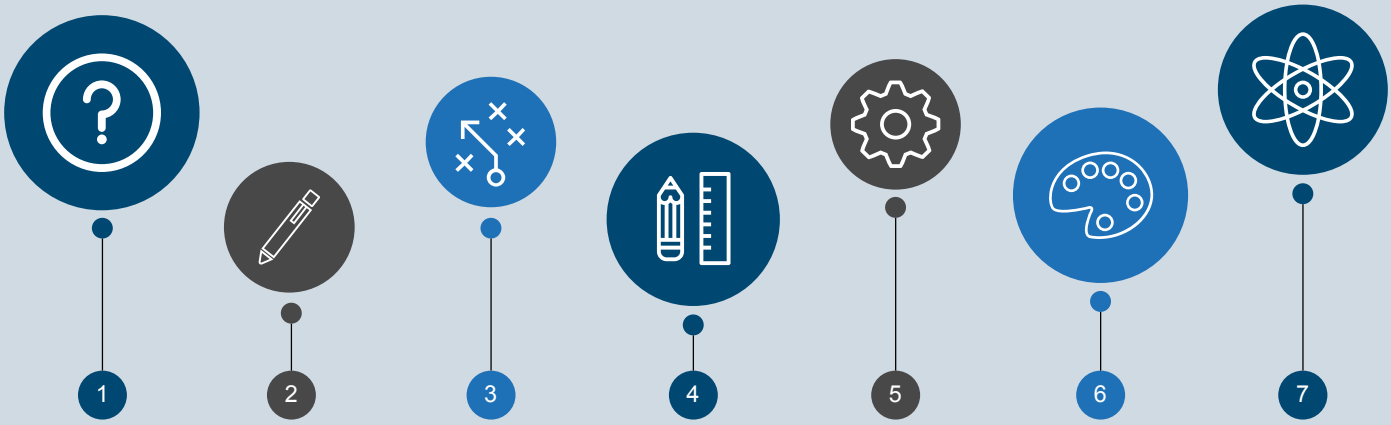
| Clinical | Safety Services | Regulatory Services | Commercial Services |
|---|---|---|---|
| Clinical data Management | AE Case Processing-Utility Model | Regulatory Publishing | PSP- Disease Mgmt. |
| Medical Writing | ICSR/AR/PSUR Reporting | Regulatory Submission | Post marketing Surveillance |
| Clinical Trial Management | | CES/CER Writing | Connected Health |
| | | Signal Detection & Risk Mgmt. | Field Support |
| | | Artwork & Pack Mgmt. | |

## Defining AI Applicability


*The defined applicability are basis Industry & Operational experience and the same may vary basis process study and process related matrix present in the respective organization for each processes.*

*Mapping of services with respective AI function is done basis potential prevalence of an AI function and its fitment in a service. In one process there can be more than one AI functions applicable and the same will be decided post due diligence and requirement analysis.*

## TechM AI & RPA propositions




**AI-based patient Monitoring**
-
For improved disease Monitoring

**Next Gen Patient Support**
-
RPA and Analytics to increase Patient Retention

**Analyze signs of neurological disease**
-
Natural Language Generation

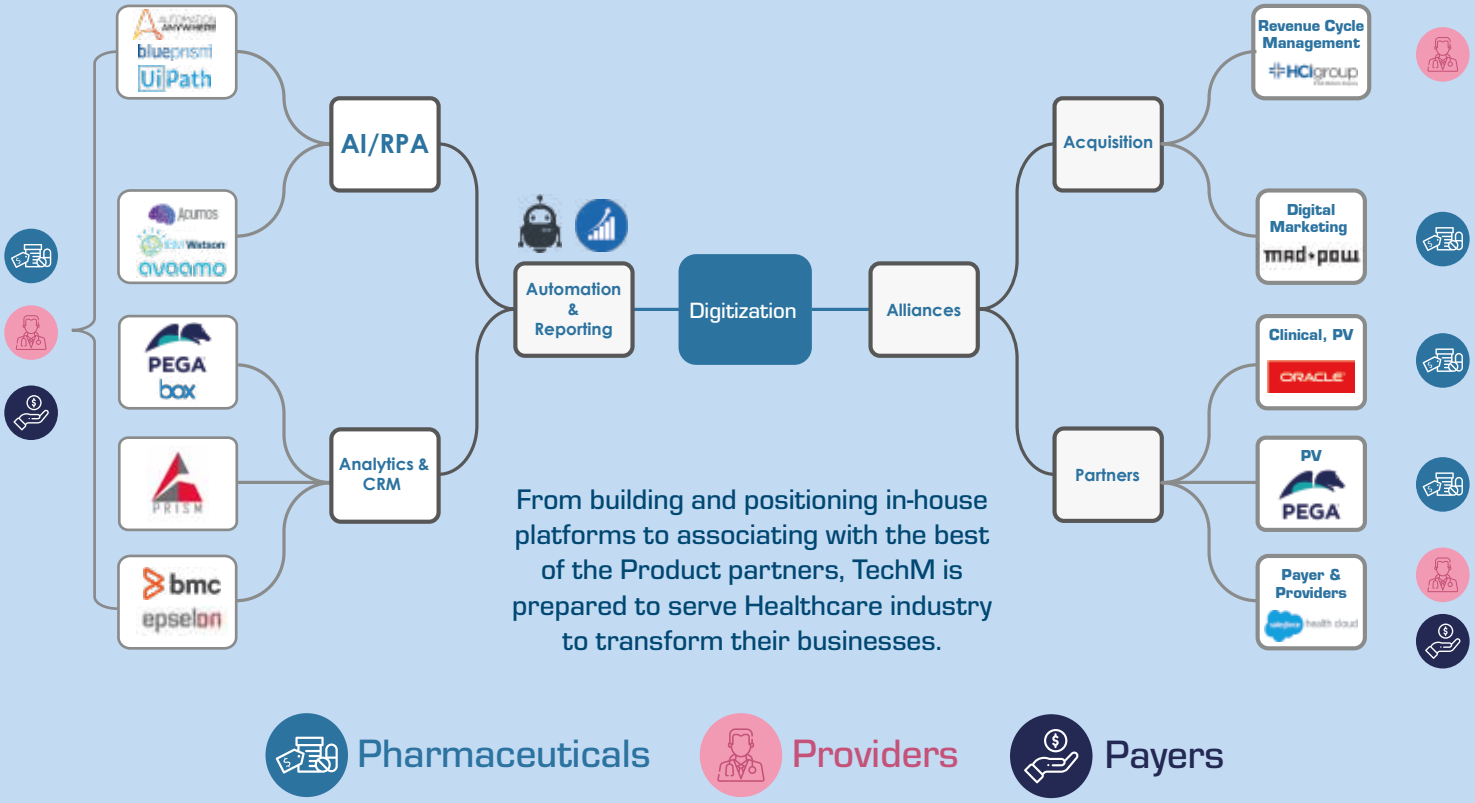
**Literature Research and consolidation**
-
Natural Language Processing in Medical Writing

**Smart Trial Management**
-
RPA and Machine Learning to enhance Site performance and speed up trials

**Digital marketing for Pharma**
-
AI based solutions for faster patient acquisition and time to Market

**Drug Development**
-
AI eases research work significantly

## Our Healthcare Enterprise Transformation Framework




## Views from other Global Leaders

RPA can help health care and life sciences organizations collect and translate patient and transactional data into meaningful, actionable formats; streamline compliance-related processes; and relieve employees of some tasks they now perform.

WSJ

Finally, there is a solution that automates virtually any manual, repetitive, task that needs to be applied to content to ensure it is accessed and acted on as part of critical healthcare business processes. A new digital workforce made up of intelligent software robots is helping healthcare organizations automate the flow of information from multiple EHRs, partner ecosystems, finance and accounting systems, and payer portals without complex coding.

KOFAX

AI and RPA can help hospitals and health plans supercharge back-office staff and improve the customer experience.

Deloitte.

As we look toward the future of healthcare, there are four industry-level changes that could disrupt healthcare value pools as they exist today: modernized transaction and data infrastructure; radically more efficient medical supply chain; faster, more effective therapy development; and new, personalized, and intuitive healthcare ecosystems.

McKinsey & Company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