



MODERNIZING MAINFRAMES FOR THE FOURTH WAVE

Abstract

As organizations ride the next wave of change driven by AI, we explore what the power of People + Software means for the core of enterprises – the mainframes.



INTRODUCTION

The history of mankind is characterized by change, and three momentous waves of change stand out, because they not only changed how we act, but also how we think. Yes, we have been transformed by waves of industrialization, computerization, and the internet.

Today, the fourth wave is upon us – a wave of change driven by artificial intelligence (AI) – and it is all about Purposeful AI that amplifies the human potential using the power of people and software. Artificial intelligence has given machines the power to do what only humans could do, until now.

As enterprises embrace this wave of change, mainframes — the core of enterprise technology infrastructure — must enable higher levels of customer responsiveness, speed, and innovation. With 70 percent of enterprise data found on mainframes, they are definitely at the heart of organizations, even today.

LEVERAGING AI FOR MAINFRAME APPLICATIONS



Mainframes are a considerable investment and accumulate years of data. Modernizing mainframes is about creating intelligent systems, automated processes, and digitalizing an enterprise to respond to future needs.

The solution – for enterprises – lies not in fighting the change, but in embracing it. And embracing this new paradigm means assessing the existing IT infrastructure and looking for ways to move from monolithic legacy landscapes – to a modern, agile,

cost-effective environment,

That's why mainframe modernization has moved to the top of CIOs' priorities.

STARTING WITH THE RIGHT APPROACH



Modernizing the mainframe through a gradual transition, rather than a sudden

transformation might work best for many enterprises. For modernization programs to

be successful, it is essential to achieve the right balance between these three factors:



Humanics: Knowledge about the mainframe applications portfolio resides with a few employees who have worked on mainframe technologies for decades. Leveraging software to find and assimilate this knowledge in a semiautomated way,

and complementing it with the subject matter expert knowledge can really help organizations discover new business opportunities and find innovative solutions to existing challenges, like an idea for marketing or a new offering.



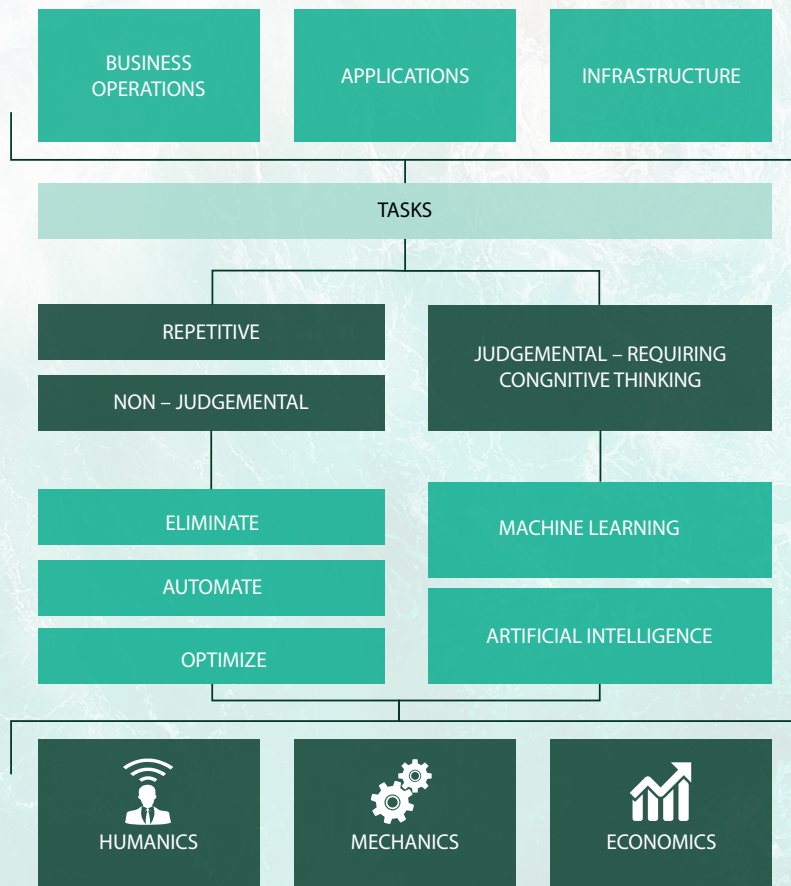
Mechanics: Creating an integrated, cohesive approach to migrate the right batch-driven workloads with many touchpoints onto an AI-powered infrastructure, can help an organization

free its people from routine tasks and offer them the time and environment to innovate, gain new capabilities, and take the business forward in new directions.

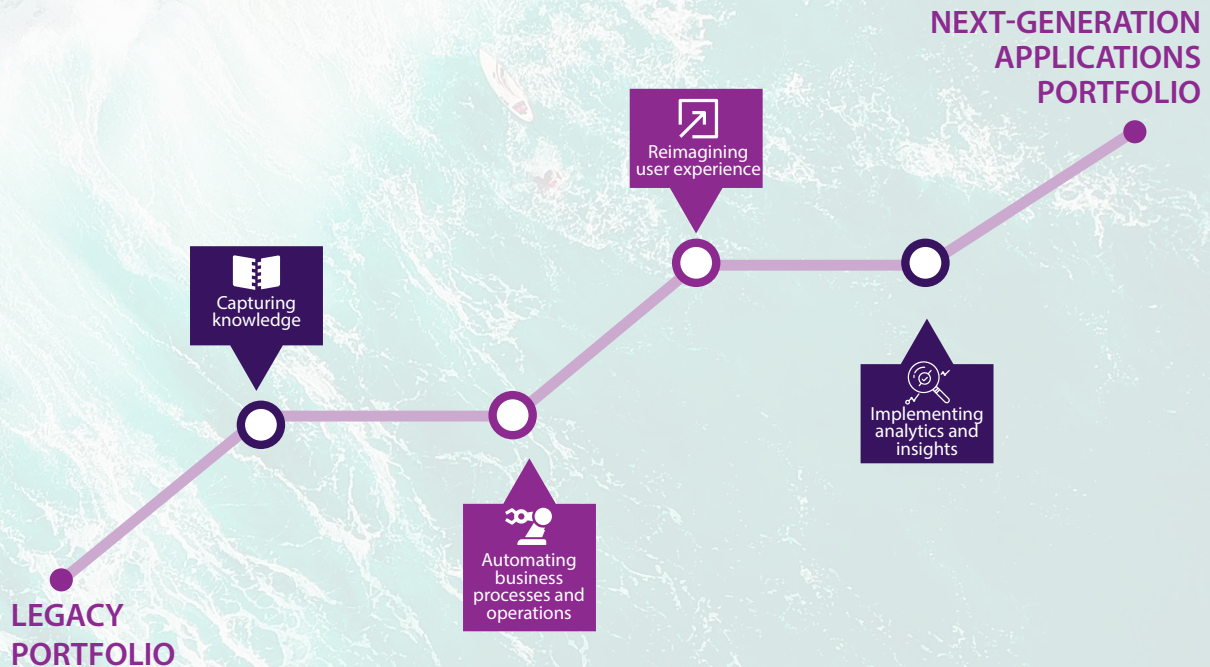


Economics: The right economic model, context, and the right mix of technologies to take the cost out of business, not add to

it. Also, adding new capabilities can impact the top-line, influencing current business, and driving new business growth.



FOUR STEPS TO LEVERAGING AI FOR MAINFRAME APPLICATIONS



CAPTURING KNOWLEDGE

The first step is to capture the complete knowledge and know-how of the existing IT landscape – the applications and

processes running on the mainframe, supplemented with the right tools and software. All these then need to

be analyzed, including business rules, program dependencies, data flows, system insights, and more.

AUTOMATING BUSINESS PROCESSES AND OPERATIONS

Enabling automation of processes, L1 tasks, production support tasks, batch jobs and restarting of batch jobs, quick production fixes, and other routine tasks that don't need much human intervention.

This step is about continuously leveraging AI and automation to identify information and tasks resting on the mainframe that are not required, decommissioning redundant applications, and simplifying

and optimizing the mainframe footprint.

This is about using software to free people from repetitive tasks, so they can utilize their talent in more meaningful ways.

REIMAGINING USER EXPERIENCES



Great user experience and customer delight are critical to businesses today and this next stage focuses on doing just that, through:

- Re-engineering applications on different,

newer, and advanced platforms and COTS solutions

- Leveraging APIs to reduce further load on the system, provide omnichannel digital experiences, introduce newer functions,

and reduce performance time

- Identifying uses for implementing Natural Language Processing (NLP) and building systems that will begin to self-learn

IMPLEMENTING ANALYTICS AND INSIGHTS



With abundant data available on the mainframe and more being generated every day across the enterprise, data-

driven analytics can not only deconstruct system logs, resolve tickets, and manage incidents, helping organizations build

a self-heal systems, it can also find user behavior patterns, derive deep insights, and help launch new products.

WHERE DO YOU START?

Modernizing the mainframe – gathering knowledge, starting automation, delivering new user experiences, and enabling

advanced analytics – means disruption, data restructuring, and cost. But what many enterprises do not realize is that a

full-scale transformation may not always be necessary.



OPTIMIZE FOR BETTER PERFORMANCE

This approach optimizes applications on the mainframe itself for agility and cost efficiency. Only low-value, high-cost workloads like system of records are re-hosted using the lift and shift method.

This can potentially help reduce the total cost of ownership by 30 percent. This is about using software to free people from repetitive tasks, so they can utilize their talent in more meaningful ways.



RENEW FOR IMPROVED USER EXPERIENCE

This approach externalizes and orchestrates business rules, enabling APIs to act as a bridge between applications on modern platforms to interact with the

mainframe. With this, new user experiences are created and MIPS consumption is optimized, so enterprises benefit from cost efficiency, improved BI, and analytics.



MIGRATE TO TRANSFORM

This approach brings about substantial transformation by:

- Migrating batch processes and taking them off the mainframe, and onto COTS solutions
- Shifting from data warehouses to data platforms, legacy databases to open source platforms like RDBMS, NOSQL, or Hadoop for scalability

- Re-engineering applications for the cloud, using automation-driven DevOps for rapid provisioning

- Embracing PaaS and SaaS for increased agility and availability with lesser cost

It helps enterprises benefit from enhanced functionality, scale, extensibility, and improved maintenance, by leveraging newer technologies and delivering new capabilities.

THESE ENTERPRISES ARE ALREADY RIDING THE FOURTH WAVE

In a recent survey commissioned by Infosys² on AI adoption across industries, 23 percent of respondents in the financial

services sector confirmed that AI technologies have been fully deployed in their organizations, and are delivering up

to expectations; 47 percent of respondents actually view AI as being fundamental to the success of organization strategy.



KNOWLEDGE IS THE KEY

A leading US-based credit card issuer was using a 20-year-old platform which resided entirely on mainframes. Leveraging People + Software, Infosys worked out a modernization road map, reverse-engineered applications, and implemented

new workflows and capabilities. It successfully delivered an estimated benefit of about US\$60 million over five years, enabling shorter time-to-market, reduced training effort, and improved quality of service.



NEW PROCESSES & BETTER INSIGHTS

As a strategic partner to a leading UK-based bank, Infosys implemented a multichannel sales platform aligning with business strategy. Insights were gathered from existing channel end-users through workshops to modernize the systems.

The engagement delivered simplified processes, a scalable system, a richer user journey, and automation, in addition to about US\$160 million in income uplift from sales, and additional cost savings of 25 percent.



DOING IT FASTER, BETTER, CHEAPER

Infosys enabled a US health insurance provider improve the auto-adjudication rate of claims by up to 85 percent by understanding inefficiencies and delivering process enhancements across all domains. The two key issues identified

and addressed were – queue-hopping (where handlers shift from one product to another) and reducing edits and errors. Infosys also developed proprietary tools and frameworks, and reduced turnaround time and effort, saving US\$2 million.



DELIGHTING CUSTOMERS

Infosys partnered with a leading US financial institution to simplify their card issuance process. This involved developing a tool to automatically evaluate customers' photographs. Now, when customers walk in to get their pictures taken, they can walk

out in minutes (manual evaluation used to take three days). And customers also get instant mobile alerts thanks to a new notification system – ensuring better fraud detection and security.

2: http://www.infosysblogs.com/infytalk/2017/01/five_ways_in_which_ai_is_changing_banking_as_we_know_it.html



REDUCED OPERATING COSTS

One of the world's largest retailers challenged Infosys to automate some of its old processes, to make its systems more user-friendly, and generate new reports that its staff could really use. Infosys not only automated old complex processes, but also decommissioned unwanted jobs,

making the landscape lighter, processes user-friendly and more relevant for users.

The optimization program saved 600+ MIPS in processing demand on the systems, and reduced IT operations costs by about US\$1.6 million.



FASTER TIME TO MARKET

Infosys modernized the mainframe of a large healthcare insurance giant and got the applications running on newer, scalable architecture. This not only simplified their IT but reduced time to

market from 12 months to 2–3 months, reduced turnaround time from 60 days to 2 days, ensured 24x7 system availability for online processing, and delivered higher customer satisfaction.



REINVENT BUSINESS

Infosys replaced the legacy system of the insurance care company with a web-based one which eliminated the limitations of maintainability, security, and usability – with minimal disruption to business. Not

only did the solution reduce the TCO by 25 percent, it also increased employee productivity by 20 percent with user-friendly features and interfaces, and supported business growth.



IMPROVING PERFORMANCE

A leading American financial service corporation's systems suffered from poor performance due to suboptimal application design, and inflexible, difficult-to-use front ends. That is, until Infosys re-engineered the legacy systems.

The data was migrated to DB2 which

improved performance, and 72 legacy client server applications were re-engineered, delivering the ability to handle additional products, user-friendly front ends, and even a new notification system. It also reduced the Total Cost of Ownership (TCO) for the client.

AMPLIFY THE POTENTIAL OF YOUR ENTERPRISE



For enterprises, the future is full of unrestrained possibilities and Purposeful AI will play three key roles in turning those possibilities into realities:

AUTOMATION

This is a role that AI has already taken on. It will not only keep machines up and running, automatically finding and fixing errors, but it will also drive efficiency, by freeing humans from monotony and allowing us to be who we really are – thinkers, explorers, and dreamers.

INNOVATION

As we get the freedom to think, explore, and dream of the many possibilities that are suddenly within reach, we will need to innovate – to ask new questions, and seek better answers. Succinctly put, it is not about the search for knowledge, but for the gaps in it – it is a journey into the unknown.

CONTINUOUS LEARNING

And as we journey into the unknown, we have to relinquish control of ‘what is’ to the machines, so we can aspire for ‘what can be’. And doing that involves learning, learning throughout our lifetimes – to seek, to explore, and to understand.

ARE YOU READY FOR AI?

To leverage artificial intelligence, machine learning, and deep learning, a very good first step is to evaluate the infrastructure you already have in place.

Measure your organization’s AI maturity with the Infosys tool at: <http://aimaturity.com/>



Ride the 4th Wave

WITH PURPOSEFUL AI

at: www.infosys.com/fourthwave

For more information, contact askus@infosys.com

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