Boosting Mendix adoption through flexible deployment and Indium Software's expertise in Center of Excellence (CoE) establishment:
A comprehensive guide for enterprises

A Whitepaper

Abstract

Leveraging Mendix, the low-code platform, helps citizen developers deal with low to no code and focus on the application's development lifecycle with more concentration and productivity. With Mendix as their application development platform, organizations can seamlessly integrate into their existing IT infrastructure, build new applications reliably, and accelerate time-to-market.

Flexible deployment methods and Indium Software's guide to setting up a Center of Excellence are key to adopting the Mendix platform. As every organization aims to bridge the gap between the IT ecosystem and business demands, empowering citizen developers with the Mendix platform solves the problem and delivers applications faster, more cost-effectively, and with higher quality.

This whitepaper explores the significance and strategies of the low-code platform. It helps position your business at the forefront of innovation in the ever-evolving landscape of technology and software development.

Table of Contents

Executive summary

With the alarming increase of the digital revolution worldwide, there is a need to stay agile, improve the development and deployment of mobile and web applications at scale, incorporate high-security features, and focus on customer satisfaction. Accelerating every detail of the entire application development lifecycle, from ideation and development to operations, and increasing the developer's productivity and efficiency are accomplished by adopting Mendix, a low-to-no-code platform.

Mendix and the Center of Excellence (CoE)

The Mendix platform is built exclusively for citizen developers of varying experience levels to support every app phase and help them focus on application logic rather than complex and extensive coding. As businesses evolve, a low-code platform with built-in tools and reusable components can quickly create enterprise-grade applications that help large organizations handle data and transactions to solve complex business challenges.

This helps validate ideas, gather feedback from users and stakeholders that accelerates app delivery, support integrations with existing data sources and legacy systems while providing security and governance. The platform is one of the most flexible modern solutions that developers and the IT ecosystem can profitably and actively rely on.

To stay ahead in the application development process through Mendix, establishing a CoE is crucial. To boost Mendix adoption among organizations, Indium Software proposes the Mendix CoE, a repository of ideas, information, and guidelines that help organizations with the latest developments, solutions, and research in Mendix practices. They also find opportunities to collaborate with industry leaders to provide skill training and workshops for citizen developers to excel on the low-code platform.

Discover Mendix adoption breakdowns

Citizen developer challenges with Mendix adoption

In the digital age, citizen developers are emerging as pivotal players in driving innovation. They are professionals, often without formal coding backgrounds, leveraging platforms like Mendix to bridge the widening IT gap. However, the path to harnessing Mendix's full potential is interspersed with challenges:

1.**Collaborative challenges:** While Mendix promotes collaboration between IT and business users, ensuring seamless communication and understanding between these groups can be challenging. Bridging the gap between domain expertise and technical nuances is crucial to succeeding in the dynamic technological landscape.

2.**Governance and oversight:** Empowerment comes with accountability. As citizen developers craft solutions, ensuring adherence to IT standards and leveraging Mendix's built-in governance tools become paramount. This governance ensures that innovations align with organizational protocols and do not inadvertently introduce risks.

3.**Real-world integration and scalability:** Beyond development lies the integration challenge. Yasmijn Joosten's solution for Kuehne + Nagel is a good example. Yasmijn, without a traditional software development background, developed an application that automated manual processes for warehouse workers by integrating wearable technology. This innovative approach not only optimized processes but also minimized shipping discrepancies. The key to her success was ensuring the solution's seamless alignment with existing systems, technologies, and workflows while preserving its scalability.

4.Customization limitations: The Mendix platform offers a range of predefined templates and tools to facilitate rapid deployment. However, a constraint arises when citizen developers aim to incorporate precise and specialized business requirements. Within the established framework of tools, the extent of customization options becomes restricted, thereby compelling them to create applications that might not fully align with optimal standards of quality.

5.Data safeguarding: Mendix's platform is renowned for its agility, which brings with it an opportunity to prioritize data protection. By aligning with regulations such as GDPR, HIPAA, or PCI DSS, users can ensure robust application compliance. Additionally, the platform's compatibility with third-party components, a notable advantage, further underscores the importance of implementing best-practice security measures to optimize its potential.

6.Navigating the learning journey: Mastering the principles of application logic, data structuring, and user interface design takes time and guidance. Understanding security protocols and privacy configurations is crucial to avoiding creating subpar applications.

The Role of flexible deployment in Mendix adoption

Organizations overcome the challenges of Mendix adoption through flexible deployment methods that ensure scalability, efficient resource utilization, and quicker application updates.

With the below-mentioned flexible deployment methods, organizations can build the Mendix platform, seamlessly integrate it into existing applications, and help developers with a low-to-no-code platform that empowers productivity and assists them to work together on the same application simultaneously, fostering teamwork and efficient development processes.

Delve deeper into the whitepaper below to gain insights into deployment methods that contribute to the successful adoption of Mendix.

Flexible deployment methods for Mendix adoption

Multi-cloud deployment

The Mendix platform is based on a cloud-native design that enables organizations to build, manage, and customize applications on various deployment platforms in the cloud environment. With cloud-native features and integration capabilities, organizations can leverage the benefits of public, private, and hybrid cloud providers to host and run applications that best suit their business needs and budget.

Particulars	Mendix Cloud	Mendix Cloud Dedicated	Mendix for Private Cloud
Ownership	Leveraged by different organizations to host the applications developed by the Mendix platform. It is built on cloud foundry and hosted on AWS servers	Powered by Mendix Cloud technology, a single-tenant environment is built within the Mendix Cloud Ecosystem.	Deployed within the respective organization's private cloud infrastructure.
Hosting infrastructure	Organizations can focus on building the application while the hosting and infrastructure process is taken care of by the Mendix Cloud	Like Mendix Cloud, the only variation lies in the organization gaining a separate server and other network infrastructure.	In this case, the organization takes full control over the network infrastructure by hosting it on a private cloud or on-premise infrastructure
Security control	Industry-standard security measures are provided through data encryption, regular security patches, and AWS's security infrastructure features like firewalls, intrusion detection, and access controls.	Since it is a single-tenant environment, the potential risks are minimal, and high-standard security proctors are available.	Based on the organization's premise, the highest level of security control is imposed.

Cost analysis	A low-cost solution as Mendix takes care of the initial hardware and procurement expenses, allowing organizations to build the application seamlessly.	In a private environment, a low cost arrives as Mendix takes major control over the infrastructure and other operational costs.	As organizations, take responsibility for allocating resources and network infrastructure, costs can go up, but can be tailored as per the need by the organization.

Containerization

With containerization, you can pack and run applications along with their dependencies in various isolated environments without affecting the consistency or functionality of the application. As they are portable and movable among computing environments, they are considered the best for Mendix adoption, as developers can minimize the chances of deployment issues caused by environment inconsistencies.

Containerization	Mendix adoption significance
Portability	Encapsulates the entire Mendix stack, configuration, runtime, and libraries, for easy access to on-premises servers, public clouds, or private clouds. Building it once and running it anywhere is the whole concept of containerization.
Scalability	Handles varying traffic levels through powerful horizontal scaling by adding identical container instances that can be scaled up and down as per demand.
Version control and rollbacks	Access the latest version of the platform and switch back to the older version if you face errors in handling the new version.
Streamlined DevOps practices	Deliver high-quality and reliable applications on time as containerization provides a consistent and standardized environment for the development and operations teams.
Microservice architecture	Divide the Mendix application into manageable components that can be scaled independently, promoting agility and shorter release cycles.

Serverless deployment

Increase the adoption capability of Mendix applications in your organization through serverless deployment, which abstracts away the complexities of scaling and managing a server. As it empowers developers to focus on writing application code and delivering business value, the time spent deciding on the operating system and other external components can be reduced.

Serverless deployment	Mendix adoption significance
Provisioning servers	Get rid of selecting servers or configuring the operating systems, as serverless computing deployment ensures that all the specifications on the Mendix are met for developers. This encourages the stakeholders to consider Mendix adoption for their businesses.
Configuring network	The cloud provider ensures that firewalls, routing switches, and load balancers are well-configured and secured. This approach ensures that developers can concentrate on the coding and development of the application.
Focus on the application code	With the shift of responsibilities to the cloud provider, developers can focus on building the Mendix application, improving its performance, and adding functionalities that enhance application development and deployment.
Reduced complexity and increased productivity	Because the cloud provider is taking care of all of the computing infrastructure's needs, developers can build, deploy, and test code more quickly, which results in shorter development cycles and a quicker time to market for applications.

Edge deployment

Deploy the Mendix platform closer to the data network or end-user location. This helps to minimize data travel and reduce latency to enhance the application's performance and responsiveness.

Edge deployment	Mendix adoption significance
Offline capabilities	Access the Mendix platform even remotely with an intermittent network signal. You can also store data on local servers during low network connectivity and later synchronize the data to the central server.
Reduced latency	As Mendix operates on real-time interactions and live data, the need to be deployed closer to the end user helps reduce data travel time between the user device and the server. This helps with better performance and a faster response time.
Geographical optimization	Mendix applications are hosted on servers in locations close to the end-user. This facilitates organizations' optimization of the application's performance to help users in different regions with their specific needs and requirements.
Reduced network congestion	With the distribution of computing resources closer to the edge of the network, the overloading of traffic from the central server can be reduced, which helps maintain the application's performance without congestion.

Flexible features of Mendix adoption

Adopting Mendix becomes streamlined and effective through the above-discussed flexible deployment methods. Let's infer in detail how flexible deployment plays a significant role in embracing the Mendix platform.

Simplified deployment

With containerization or serverless deployment, it is evident that the Mendix application can be easily and seamlessly deployed into an organization's existing computing environment. Also, the Mendix platform runs on all cloud infrastructure, making it a more viable solution for developers and organizations to consider Mendix as a permanent platform for developing and scaling new applications.

Developer-centric

By taking advantage of containerization and multi-cloud deployment, developers can streamline and speed up the Mendix platform integration, as the flexible methods help them focus on building the application while the infrastructure maintenance, building, and other external server work are taken care of. This helps in faster deployment and delivery of applications.

One-click automation

The Mendix platform can be deployed with a one-click feature that automates the deployment process to the desired cloud provider, like Docker or Cloud Foundry. This eliminates the need for complex setup or configuration, making it easy for organizations to get their applications up and running quickly.

Budget-friendly platform

With flexible deployment methods, adopting the Mendix platform is compatible and aligns with the organization's budget and needs. Also, it supports a multi-cloud deployment that empowers organizations with affordable charges, eliminating down payments on servers and other operational expenses. This helps in having a cost-effective deployment of Mendix.

Establishing a Center of Excellence (CoE) for Mendix - The Indium Software way

Indium Software's Center of Excellence (CoE) - Benefits

Resource mastery:

Efficient allocation and utilization of resources are paramount in a CoE. With its structured framework, Indium Software's CoE acts as a compass for organizations, directing optimal resource allocation and utilization. This systematic approach paves the way for efficient project workflows, minimizes resource overlap, and amplifies ROI. Notably, Indium's CoE equips citizen developers with the tools and best practices they need, ensuring they contribute effectively to this optimization.

As Adrian Leow of Gartner insightfully remarks,
"It's important to note that citizen developer benefits are focused on productivity gains rather than the misconception that an enterprise could reduce their expenditure because they think they won't need as many expensive professional developers."

The epicenter of breakthroughs:

A CoE is the nexus of technological innovation, perpetually engaged in the research and assimilation of cutting-edge advancements.
Indium Software's CoE stands at the crossroads of the newest trends, consistently delving into the latest progress and solutions. A significant part of this innovation aims to empower citizen developers with state-of-the-art tools. The CoE ensures they can craft solutions that break new ground and define industry benchmarks.

Economical brilliance:

Indium Software's CoE excels at formulating strategies that magnify value while maintaining fiscal prudence. A profound understanding of cost-effective methodologies enables organizations to soar without financial constraints.

Quality assurance:

Indium Software ensures that all processes and outputs meet the highest industry standards. With Indium Software's vast experience, the CoE's guidelines and tools are designed to ensure that citizen developers, even without coding expertise, can produce top-tier results. This commitment to quality enhances the organization's reputation, reduces errors, and increases customer satisfaction.

Swift onboarding:

Efficiently integrating new tools and processes is crucial for a CoE. Indium Software's CoE achieves this through well-organized training modules and detailed documentation, enabling citizen developers to quickly adapt to the platform. This operational fluidity truncates downtime, propelling project velocity.

Collaborative culture:

Collaboration is cited as a top factor in innovation by many industry leaders. Indium Software's CoE champions a culture of collaboration. Fostering an environment emphasizing knowledge exchange and teamwork ensures that teams can seamlessly share insights, draw from each other's expertise, and function cohesively. This collaborative spirit fuels innovation and dismantles operational silos, crafting a unified workspace.

A real-world example from Chevron showcases the impact of such collaboration:

In response to flash floods affecting Chevron's workforce residences in Africa, a proactive citizen developer within the company promptly devised an advanced tool facilitating swift damage reporting and meticulous resolution tracking.

Indium Software's Mendix CoE: Orchestrating seamless integration

Indium Software's Center of Excellence (CoE) is a specialized entity, dedicated to the seamless adoption of the Mendix platform. It is instrumental in driving innovation, streamlining implementation, and addressing organizational inefficiencies. As a hub of efficient ideas and knowledge, the CoE helps organizations maximize the benefits of the Mendix platform and achieve their business goals.

Below is the operational process through which Indium Software's Center of Excellence effectively assists organizations in adopting the Mendix application.

01| Understanding & strategizing

- Indium Software's CoE offers a deep dive into Mendix's capabilities and other leading innovations.

- By aligning strategies with organizational objectives, the CoE ensures that even citizen developers are well-positioned to harness the platform's full potential.

02| Building & integrating

- Once the Mendix platform is set, the CoE assembles a team that shares a common vision and passion for the Mendix platform.

- This team, the CoE's core unit, is tasked with integrating Mendix seamlessly into the organization, enabling non-technical users to build applications.

03| Training & development

- Upon CoE establishment, focus on continuously upskilling developers, testers, and operations teams.

- Indium Software's CoE, with its deep reservoir of Mendix knowledge, provides the necessary inputs to stakeholders and other key personnel in the organization for continuous support in the development and innovation of the platform.

They also provide invaluable insights and resources that enable citizen developers to navigate the platform with confidence and proficiency.

04| Support & knowledge sharing

- The CoE emphasizes knowledge dissemination throughout the project lifecycle, as it boosts the team's confidence to overcome the challenges.

- Indium Software also makes sure the teams or organization foster collaboration by exchanging ideas and having discussions among various teams that assist in solving the problem.

05| Metrics & success

- Indium Software's CoE establishes KPIs in alignment with its objectives. These metrics, encompassing developer productivity and time-to-market, are a barometer for gauging the CoE's efficacy and the Mendix platform's success within the organization.

06| Continuous support & learning curve

- Indium Software's CoE, fortified with state-of-the-art infrastructure and technologies, provides unwavering support to boost Mendix platform adoption in the organization, ensuring that the organization remains at the cutting edge of technological innovation.

Case study: Streamlining healthcare data & boosting Mendix platform adoption

A pioneer in precision healthcare services wanted to facilitate interactions between physicians and patients across hospitals, research centers, universities, and advanced community sites. The healthcare industry required the following, as physicians rely on data for patient information and diagnosis:

- A robust application with cutting-edge technology.
- Perform acceptance and exploratory tests to identify bugs quickly.
- Convert business requirements into active functionality as early as possible.

Solutions offered by Indium Software

With the Mendix platform's built-in components, model-driven development, and scalability, Indium Software proposed Mendix for end-to-end platform development.

- Developed a comprehensive workflow model of the application aligned with the requirements, and then mapped these workflow requirements for the development phase.
- Implemented role-based functionalities, including user accounts and privileges, followed by integrating individual features to achieve end-to-end functionalities.
- Performed performance testing of the functional components at the microservice level.
- To ensure quality, Indium Software consistently engaged functional test engineers for each release, who diligently conducted thorough quality checks on the features and performed meticulous manual testing of the functionalities.

Outcome

The application that was created successfully attained the following primary business objectives:

- Enhanced patient enrollment experience
- Through cloud deployment, an increase in application adoption among enterprise clients was visible. The client opted for cloud deployment as it was a feasible solution for their organization in terms of requirements and budget.

Indium Software & Mendix - The collaboration for your organization

Explore the Mendix platform through Indium Software's comprehensive proposition, where the handpicked Mendix experts assist you with 50+ reusable assets and accelerators that help your organization fasten the development process with Mendix. They also help build a robust architecture foundation and guide you through the platform's intricacies with custom widgets that help you build the application swiftly and efficiently.

IndiuMX Grouping autocomplete - Enhances your search and input functionality as Indium Software offers a rich and varied drop-down feature.

IndiuMX- BPMN 2.0 web viewer - Integrate the latest Mendix platform with Indium Software and upgrade tools as per your requirements.

IndiuMX-Google connector - Connect with Google service APIs and other services that use server-to-server communication through Indium Software authorization tokens.

IndiuMX Timer - Empower your application development with the timer widget that provides an onchange event for start, stop, and restart operations.

IndiuMX Datepicker - Refine the Mendix date functionality with a custom widget to enable or disable it.

Conclusion: Accelerate Mendix adoption and tap into nove opportunities with Indium Software

Encouraging organizational developers with the Mendix Platform will facilitate business growth and innovation. As the Mendix platform is a collaborative approach, it improves team communication at every stage of the application development lifecycle. Its inherent capabilities to seamlessly integrate with diverse cloud environments, from public to private, and from containerized to serverless, offer businesses a versatile toolkit to navigate the complexities of modern application development.

Indium Software, with its profound expertise and unwavering dedication to innovation, enhances the journey by guiding enterprises through the intricacies of Mendix integration.

Organizations can boost Mendix adoption with the guidance of Indium Software's CoE and leverage the platform to its full potential. As the technology landscape continues to evolve and develop, Mendix remains at the forefront, empowering organizations to turn their visions into reality with speed, agility, and innovation.

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