ISB CTO
Week 5: CTO as Technology Architect

Video 1: Module Overview

- In the digital economy, firms must simultaneously address customer experience and operational synchronisation.
- Balancing open innovation with the ability to commercialise new ideas is crucial.
- Building a robust technology platform is essential for scaling and launching good ideas.
- Experimentation should be supported by suitable platforms that enable scaling and accelerated learning.
- As a technology architect the CTO's role involves translating business strategy into technology strategy and aligning technology with business priorities and challenges.

Video 2: Digital Economy: Business Imperatives

- Speed to market is crucial in the digital economy to stay competitive.
- Providing seamless multichannel experiences enhances customer satisfaction and loyalty.
- Utilising big data and advanced analytics enables better understanding of customer behaviour.
- Automating operations and digitising business processes improves responsiveness and efficiency.

Video 3: Digital Economy: Technology Imperatives

- Establishing an enhanced web presence is crucial for businesses in the digital economy.
- Managing the complexity of app infrastructure requires API development and integrated access to content.
- Enterprise platforms like ERP, CRM, and SCM serve as backends for app infrastructure.
- Effective data warehousing and analytics platforms are essential for informed decision-making.
- Cloud platforms play a significant role in modern business infrastructure.
- Digital marketing and collaboration tools are vital for effective communication and workflow management.
- The CTO plays a crucial role in understanding, integrating, and predicting technological advancements.

Video 4: Assembling the Digital Infrastructure

- As a technology architect the CTO uses the digital infrastructure framework.
- The framework identifies five ways of assembling the digital infrastructure.
    - Operational backbone for operational efficiency, productivity, and reliability.
    - Shared customer insights for generating and sharing customer knowledge.
    - Digital platform as a repository of business, technology, and data components.
    - External developer platform for external orientation and open innovation.
    - Governance framework for decision-making and accountability.

Video 5: The Digital Infrastructure

- The operational backbone supports seamless transaction processing and automates business processes.
- The digital platform embraces a component-based architecture and serves as a repository of reusable components.

- The external developer platform fosters open innovation and engages external partners through APIs.
- Shared customer insights stem from continuous experimentation, co-creation, and effective knowledge sharing.
- The governance framework establishes clear accountabilities and decision-making processes within the digital infrastructure.

Video 6: The Technology Strategy

- Synchronising business and technology strategies is essential for effective technology investments.
- Twin speed architecture balances a slow-moving backend with a fast, customer-centric frontend.
- Embracing microservices enables agility and modularity in the digital infrastructure.
- Zero downtime implementation ensures seamless upgrades and minimal disruption.
- Real-time data analytics enhance decision-making and customer experiences.
- Robust security measures protect valuable data and ensure regulatory compliance.
- Developing a comprehensive technology strategy assures high performance across these dimensions.

Video 7: Developing a Two-Speed Architecture

- Develop a hybrid target architecture that accommodates both fast-speed frontend and slow-speed backend systems.
- Blend agile and waterfall methodologies to leverage the benefits of both approaches.
- Pay attention to the development and maintenance of the low-speed backend architecture to support frontend applications effectively.
- View technology investments as capital expenditures to prioritise strategic decision-making and long-term planning.
- Manage change at multiple levels simultaneously, addressing immediate needs while optimising integration and infrastructure for medium and long-term goals.

Video 8: Action Plan for a CTO

- Developing a technology infrastructure strategy is essential for a CTO.
- Orchestration of the technology ecosystem involves engaging with vendors, consultants, and app developers.
- Balancing the financial and strategic business case is crucial when making technology investment decisions.
- Continuous research and development activities help the CTO stay informed about emerging technologies.
- Building and managing the human capital infrastructure is vital to ensure a skilled and productive technical workforce.

Video 9: Module Summary

- Developing a technology strategy that balances scalability and experiments is vital.
- Embracing paradoxes and finding ways to simultaneously be open and flexible, yet robust and protected, is crucial.
- The two-speed architecture provides a framework for blending fast front-end platforms with deliberate back-end platforms.
- The CTO plays a critical role in synchronising business, digital innovation, and technology strategies.