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Business Models and Reference Architecture for IIoT

Business Models – Part 1

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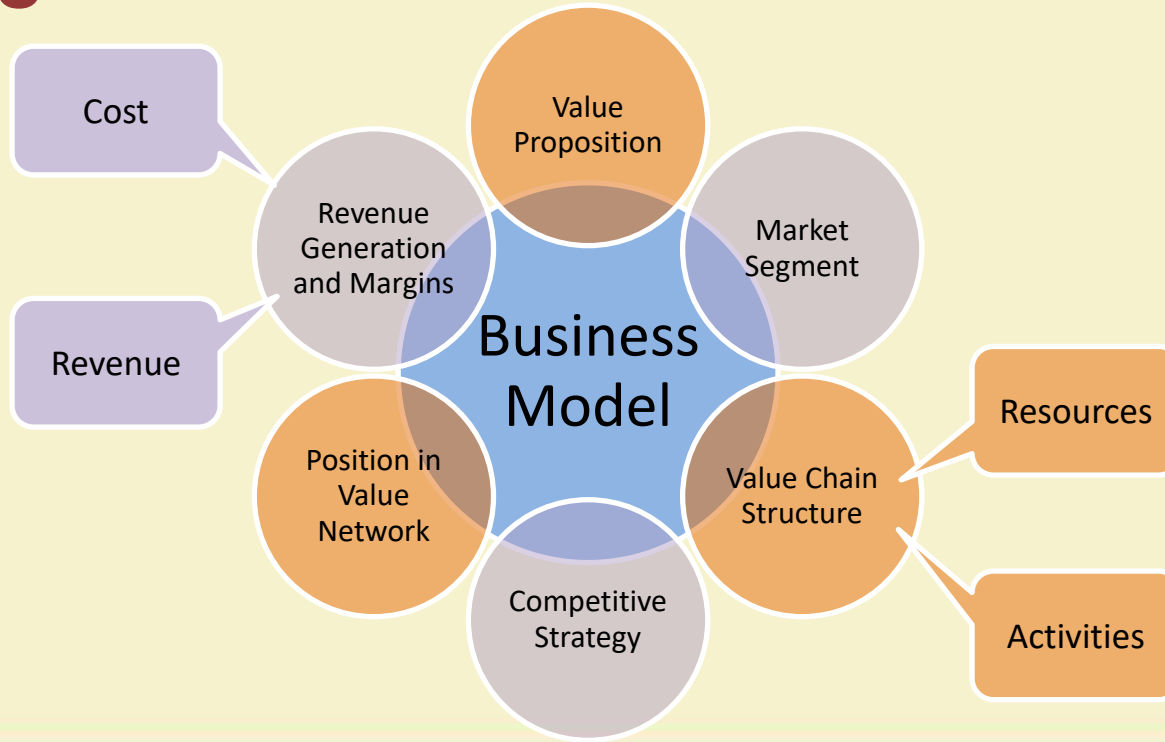
What is a Business Model?

- *“A business model describes the rationale of how an organization creates, delivers, and captures value”*

[Business Model Generation]

- It is the embodiment of the organizational and financial architecture of a business
- Description of how a business intends to operate and earn profits in a specific marketplace

Building Blocks of a Business Model



Building Blocks of a Business Model (Contd.)

➤ Value Proposition

- Products or services that create value for a customer segment
- Values may be:
 - Quantitative
 - Price, product or service performance, post-purchase cost reduction
 - Qualitative
 - Design, customization, customer experience, brand

Building Blocks of a Business Model (Contd.)

➤ Market Segment

- Different groups of customers or end-user organizations that the business enterprise aims to serve
- There are different types of customer segments:
 - Mass market
 - Niche market
 - Segmented
 - Diversified
 - Multi-sided markets

Building Blocks of a Business Model (Contd.)

➤ Value Chain Structure

- The key resources and activities that a business requires to create value proposition
- Resources:
 - Can be Physical, Intellectual, Human, Financial
 - Key resources can be owned or leased by the company or acquired from key partners.
- Activities:
 - Production, Problem solving, Platform/Network

Building Blocks of a Business Model (Contd.)

- Revenue Generation and Margins
 - The revenue that is generated from each customer segment in a business
 - Two different types of Revenue Streams -Transaction revenues and Recurring revenues
 - Ways to generate revenue – Asset sales, Subscription fees, Usage fee, Leasing/Renting, Licensing, Brokerage, Advertising
 - Two types of pricing – Fixed and Dynamic

Building Blocks of a Business Model (Contd.)

- Position in Value Network
 - Value proposition also depends on the network of suppliers and partners
 - Partnerships and alliances created to –
 - Optimize business models
 - Reduce risks
 - Acquire resources

Building Blocks of a Business Model (Contd.)

➤ Competitive Strategy

- Strategy of a particular company to gain competitive advantage over its competitors in the market
- Three generic competing strategies:
 - Cost leadership
 - Differentiation by bringing something unique to customers
 - Focus on a small market segment or a niche rather than the mass market

Need for New Business Models for IoT

- Advent of IoT has resulted in the following:
 - Increased business opportunities
 - Efficient processes
 - Enhanced asset utilization
 - Increased productivity
- Business challenges in IoT:
 - Diversity of objects
 - Immaturity of innovation
 - Unstructured ecosystems

Need for New Business Models for IoT (Contd.)

- IoT business models must address these requirements:
 - Extend scope beyond the company level to ecosystem level
 - Support design/visualization of complex value streams within the stakeholder network
 - Explicitly consider the value proposition for all key stakeholders (e.g., users, customers, and partners)
 - Consider data as an asset within and beyond the actual opportunity

Types of Business Models for IoT

- Subscription Model
- Outcome-Based Model
- Asset-Sharing Model
- IoT-as-a-Service
- Others:
 - IoT Products as a Proxy to Sell Another Product
 - IoT Products as a Vehicle to Monetize Data

Subscription Model

- Data generated by IoT devices is “consumable, measurable and repeatable”
- It is capable of generating “recurring” revenue
- Using this model:
 - Instead of a one-time charge, customers are offered a regular subscription
 - Here, a fee is charged for periodic usage

Subscription Model: Advantages

- Provides predictable, recurring revenue
- The product can be monetized by providing paid upgrades or by implementing a “freemium” model.
- Businesses are able to foster active relationships with customers due to repeated post-subscription interaction
- Businesses are able to learn more about their customers and are able to provide services specific to their requirements

Subscription Model: Challenges

- Customer management
- Automatic invoicing
- Plan management
- Requirement of skilled labor and organizational structure
- Requirement of regular updates

Outcome-Based Model

- Businesses deliver to the customer the outcome/benefits that the product/service provides – “Pay-per-outcome”
- Customer is relieved from the responsibilities of ownership, and maintenance
- It brings together the businesses and their customers to monetize the solutions

Outcome-Based Model: Advantages

- Increased profit margin
- Reduced negotiation cycle
- Higher customer satisfaction
- Reduced risks
- Better alignment of the value proposition of the vendor and consumer

Outcome-Based Model: Challenges

- Requirement of new infrastructure, policies and processes
- Price standardization
- Safe and reliable outcome delivery
- Lack of proven business models

Asset-Sharing Model

- Businesses virtually consolidate and share their IoT-enabled assets among multiple customers or with other business entities in exchange of revenue
- Revenue is charged based on time or nature of usage
- Aim is to minimize downtime and maximize utilization of the assets
- Can be used for Smart Energy

Asset-Sharing Model: Advantages

- Increased profit margin
- Reduced price for customers
- Ease of scaling of business
- Reduced wastage of resources

Asset-Sharing Model: Challenges

- Security of products/services
- Mutual arrangements among business entities
- Asset configuration
- Device synchronization and synergies

IoT-as-a-Service

- Businesses provide IoT-enabled products on lease to customers and earn revenue
- Products can be anything – software, hardware, information/data, results obtained from analysis of data, etc
- Revenue based on volume and quality
- Generates recurring revenue
- Example: Sensor-as-a-Service

IoT-as-a-Service: Advantages

- Reduced licensing costs
- Increased revenue from planned upgrades
- Better aligned value propositions
- Efficient operations and preventive maintenance by vendors
- Better customer relations

IoT-as-a-Service: Challenges

- Product compatibility
- Maintaining data accuracy
- Security of data

Other Models

- IoT Products as a Proxy to Sell Another Product
 - IoT products are sold at cost price or at loss to sell other products
 - For example, IoT devices keep track of status of products and perform actions accordingly
 - Used by manufacturers to sell products which require refills

Other Models (Contd.)

- IoT Products as a Vehicle to Monetize Data
 - IoT-enabled products collect data from users while providing services
 - This data is sold by businesses to third party businesses to earn revenue
 - As per requirement, data is processed and aggregated
 - Customers must be made aware beforehand about the usage of their data and privacy policies

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Thank You!!