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CONCEPT OF SUPPLY CHAIN MANAGEMENT

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I have noticed that the term 'Supply Chain Management' is becoming more and more deeply embedded into the vocabulary of organizational managers; nevertheless, its true concept is not very well understood even by many professionals. Many people confuse the term supply chain management with terms like logistics management, distribution management, transportation management, supply management, and procurement management. All these terms are related to supply chain management but we cannot confine supply chain management to any of these concepts.

I know a few organizations that just changed the name of their 'purchasing' department to 'supply chain management' department to give it a newer look without any change in the actual functioning of the department. I have even noticed a few people holding senior management positions in organizations including those in the position of a CEO who are not clear about the term 'supply chain management'. It is therefore necessary to understand the right concept of a supply chain management.It is a very broad concept inclusive of numerous branches of the business including all the aforementioned areas of business activity.

WHAT IS A SUPPLY CHAIN

Figure 1 shows the supply chain of a popular household drink that is tea. Consumers buy tea from retail outlets. The retailers get the tea for their shops from the tea wholesalers or distributors. The distributors get the tea from the tea blending and packaging plant. This is the main plant that owns the brand name of a tea. The blending plant buys the tea leaves at tea auctions or from tea brokers. The tea brokers get the tea leaves from the tea plantation sites with adjacent tea leaves processing units. The other major purchase of the tea blending plant is from the producer of packaging material. The packaging material factory buys paper/board from paper and board manufacturers. The packaging material factory also buys chemicals/ink from the chemicals and ink producers. Although the supply chain has a definite end on the consumer (end-user) side the chain will go on the supplier side. For example, even a tea plantation site has its own suppliers like the supplier of fertilizer, etc. However, for illustration and definition purposes, the supply chain of any product is ended at the raw material production stage like in this case, at the stage of tea plantation.

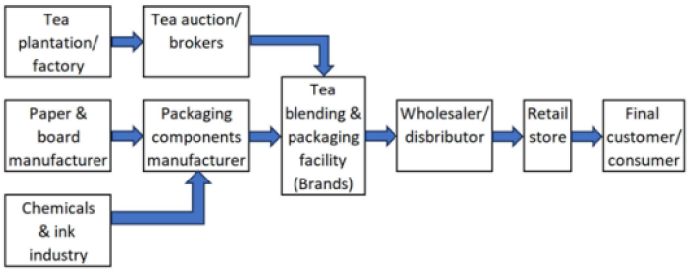

Figure 1: Supply chain of tea

APICS dictionary defines supply chain as, "The global network used to deliver products and services from raw materials to end customers through an engineered flow of information, physical distribution, and cash". Chopra and Meindl write, "A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request". Thus, a supply chain of a product includes many organizations like manufacturers, suppliers, logistics providers, warehouses, wholesalers, and retailers. Figure 2 shows a schematic diagram for a computer supply chain consisting of various organizations contributing to the production and sale of computers. This supply chain consists of silicon producers, integrated circuits producers, printed circuit board producers, computer assembler, distributors, and the retailer.

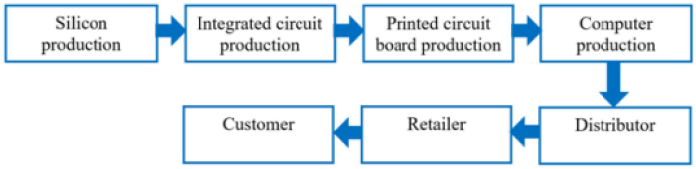

Figure 2: Supply chain of a computer

As depicted in Figure 3, a supply of a product is a complex network that may consist of several suppliers, multiple production facilities, multiple warehouses, and multiple retailers. There can be multiple sales channels for a product including physical shops, company websites, and online marketplaces. These days however online

selling is becoming more and more popular in many product categories.

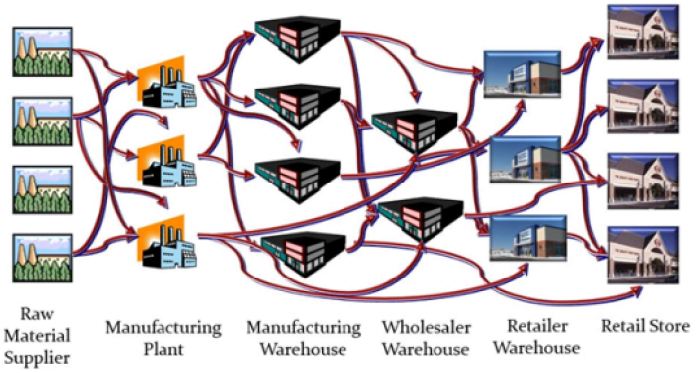

Figure 3: Integrated supply chain network

Supply chains exist for both manufacturing and service organizations. Within each organization, a supply chain includes all functional areas involved in receiving and filling the customer order, including sales and, marketing, operations, distribution, finance, and customer service. Thus, the concept of supply chain is very broad and it involves various functional areas within an organization and various organizations contributing to the supply of a product or service in the market.

FOUR FLOWS IN SUPPLY CHAINS

As an analogy, if we consider a supply chain as a pipeline consisting of various organizations in a supply chain then four things are flowing through that pipe. The first flow is information flowing among supply chain partner organizations. The direction of information flow is both upstream to downstream and from downstream to upstream, that is, the flow in both directions. The primary cash or funds flow is from downstream to upstream in the form of payments for products and services bought from the suppliers of each organization. The primary product flow is from upstream to downstream. The reverse product flow is from downstream to upstream which may be due to many reasons like product returns, recycling, refilling, refurbishment, repairs, etc. Figure 4 depicts these four flows in a supply chain with examples of each flow. One major objective of supply chain management is to effectively and efficiently manage these four types of flows in a supply chain.

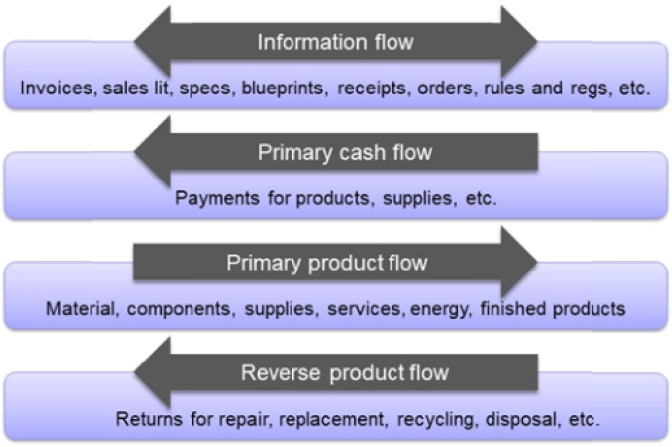

Figure 4: Four flows in a supply chain

MANAGING SUPPLY CHAINS

Historically, managerial attention was devoted to issues that were internal to companies, and specialists in procurements, sales, and logistics were assigned to 'deal' with all external entities like suppliers and customers. The first major change in this perspective can be traced back to the explosive growth of Just-in-Time concepts in the 1970s. With this shift, suppliers and customers began to be viewed as partners who shared mutually linked destinies. Great emphasis was then placed on the trust between partners and many formal boundary mechanisms, such as the receiving/inspection activity of incoming parts, were either changed or eliminated. As the partnership concept among the organizations grew, many other changes in the relationship were experienced including mutual analysis of cost reduction, mutual product design, and enhanced information flows. The term supply chain management eventually evolved. In the 1990s the term supply chain became part of the vocabulary of some organizational CEOs, COOs, CFOs, and CIOs. Ultimately, organizations in the supply chain started to be considered as extended enterprise with joint destinies.

The concept of supply chain management further expanded with the accelerated advancement in computer capability and associated software applications as well as the rise in global competition. Shorter product life cycles in many industries forced companies to not only become more agile and flexible but also to enhance the communication of changes and needs to suppliers and distributors. It is said that a chain is as strong as its weakest link. This also holds in the context of supply chains. Almost all organizations rely heavily upon their suppliers and distribution partners to produce and sell their products effectively and efficiently. This is because any disturbance in its supply-side or distribution side can severely hamper the ability of an organization to produce and sell its products. Therefore, Supply Chain professionals view the working of all the organizations in a supply chain as a single extended enterprise with linked goals.

APICS dictionary defines supply chain management as, "the design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply and demand, and measuring performance globally." This definition elaborates on many aspects that are important for managing supply chains. Firstly, the definition talks about the various management tasks including planning, executing, monitoring, and controlling various activities related to supply chain management. The definition starts with the designing of the supply chain network and ends with the monitoring and controlling of the supply chain activities during routine operations. Designing supply chains involves activities like deciding upon the location of the various facilities like manufacturing plants and warehouses; designing an effective transportation network; selecting suppliers and other supply chain partner organizations, etc.

The definition also talks about other important aspects of supply chain management like creating value through supply chains for the customer, building a competitive infrastructure, making use of available worldwide logistics, and performance management using supply chain-related metrics. The definition also talks about a very important aspect of managing the supply chains which is synchronizing the supply and demand of the product to avoid sales loss or oversupply of a product. Organizations that adopt the concept of supply chain management view the entire set of supply chain activities from the initial phase of raw material production to the final stage of purchase by the consumer as a linked chain of activities.

10 Emerging Technologies that Transform Businesses in 2024

By: Muhammad Aleem Habib

As we approach the year 2024, we find ourselves on the cusp of a technological revolution. The pace of technological innovation is accelerating, and it can be difficult to keep up with the latest trends. From quantum computing to autonomous vehicles, these emerging technologies are poised to change the way we live and work. However, there are a number of emerging technologies that have the potential to have a significant impact on our lives in the coming years. In this article, we will explore the top 10 emerging technologies that are expected to make a significant impact in 2024 and beyond. We will examine the potential of each technology, its current state of development, and the implications it may have for various industries and sectors.

Here are few emerging technologies to watch in 2024:

1. Quantum computing:Transforming Computing Power

Quantum computing is a new type of computing that uses the laws of quantum mechanics to solve problems that are intractable for traditional computers. Quantum computing has long been the stuff of science fiction, but in 2024, it is set to become a reality. This emerging technology has the potential to transform computing power as we know it, enabling us to solve complex problems at a speed and scale that was previously unimaginable.While still in its early stages of development, quantum computing has already shown promising results in a range of applications, including drug discovery, financial modelling, and traffic optimization. As the technology continues to mature, we can expect to see even more applications emerge, transforming industries and unlocking new possibilities. In 2024, we can expect to see the first commercial quantum computers being deployed.

As we look ahead to 2024, quantum computing is poised to revolutionize computing power, unlocking new frontiers of innovation and discovery.

2. Augmented Reality: Enhancing Our Perception of Reality

Augmented reality (AR) is a rapidly emerging technology that is set to change the way we interact with the world around us. By overlaying digital information onto our physical environment, AR has the potential to enhance our perception of reality and provide us with new insights and experiences.

In 2024, we can expect to see AR technology become even more sophisticated, with advancements in areas such as machine learning, computer vision, and natural language processing. This will enable AR to recognize and respond to our surroundings in real-time, opening new possibilities for education, entertainment, and commerce.In the world of commerce, AR has the potential to transform the way we shop and make purchasing decisions. By overlaying product information, reviews, and ratings onto physical products, AR can provide consumers with a more engaging and informative shopping experience, leading to increased sales and customer satisfaction.

As we look ahead to 2024, AR is poised to become an increasingly important technology, enhancing our perception of reality and unlocking new possibilities for innovation and creativity.

3. Autonomous Vehicles: The Future of Transportation

Autonomous vehicles are one of the most exciting emerging technologies, set to transform the way we think about transportation. By eliminating the need for human drivers, autonomous vehicles have the potential to improve safety, reduce traffic congestion, and increase mobility for millions of people around the world.

In 2024, we can expect to see autonomous vehicles become even more advanced, with improvements in areas such as sensor technology, machine learning, and connectivity. This will enable autonomous vehicles to navigate complex environments and interact with other vehicles and infrastructure in real-time, paving the way for a future where driving is no longer the norm.

One of the most promising applications of autonomous vehicles is in the logistics and delivery industries. By automating the transportation of goods and packages, autonomous vehicles can reduce costs, increase efficiency, and improve the customer experience. Moreover by providing on-demand transportation that is safe, efficient, and cost-effective, autonomous vehicles can help to improve accessibility and mobility for people who are currently underserved by traditional transportation systems.

As we look ahead to 2024, autonomous vehicles are poised to become an increasingly important technology, revolutionizing the way we think about transportation.

4. Smart Cities: Creating Sustainable Urban Environments

Smart cities are an emerging technology trend that aims to create sustainable urban environments using data and technology. By integrating information and communication technology into city infrastructure, smart cities can improve energy efficiency, reduce traffic congestion, and enhance the quality of life for residents.

In 2024, we can expect to see smart cities become even more prevalent, with advancements in areas such as the Internet of Things (IoT), 5G networks, and artificial intelligence. This will enable smart cities to become more connected, efficient, and responsive to the needs of their residents.

One of the most promising applications of smart cities is in the field of energy management. By using data analytics and smart meters, smart cities can monitor energy usage and optimize energy consumption, reducing costs and environmental impact. Smart cities can also improve transportation systems by providing real-time traffic information, optimizing public transit routes, and enabling autonomous vehicles. This can help to reduce traffic congestion, improve air quality, and enhance mobility for residents.

As we look ahead to 2024, smart cities are set to become an increasingly important technology trend, creating sustainable urban environments that are more liveable and resilient.

5. Edge Computing: Moving Data Processing Closer to the Source

Edge computing is a new and emerging technology that aims to bring data processing closer to the source of the data, reducing latency and improving efficiency. By processing data at the edge of the network, rather than sending it to a centralized location for processing, edge computing can provide faster and more responsive services.

In 2024, we can expect to see edge computing become even more prevalent, with advancements in areas such as machine learning, artificial intelligence, and the Internet of Things (IoT). This will enable edge computing to become more intelligent and capable, paving the way for a future where data processing is faster, more secure, and more efficient.

One of the most promising applications of edge computing is in the field of healthcare. By bringing data processing to the point of care, edge computing can help healthcare professionals to make faster and more accurate diagnoses, leading to better outcomes for patients.

As we look ahead to 2024, edge computing is set to become an increasingly important technology trend, moving data processing closer to the source and unlocking new possibilities for innovation and efficiency.

to be continued

INSPIRATIONAL QUOTES

Success is not final, failure is not fatal: it is the courage to continue that counts.
— Winston Churchill

You define your own life. Don't let other people write your script.
— Oprah Winfrey

It is during our darkest moments that we must focus to see the light.
— Aristotle

Karachi

Oct 02-03	EVENT MANAGEMENT SKILLS
Oct 02-03	SUPPLY CHAIN MANAGEMENT
Oct 04-05	DEVELOPING MANAGERIAL COMPETENCIES
Oct 09-10	SKILLS IN ADMINISTRATION
Oct 16-17	DEVELOPING EMPLOYEE PERFORMANCE MEASUREMENT AND KPI SYSTEM
Oct 16-20	MANAGEMENT COURSE FOR JUNIOR EXECUTIVES
Oct 18-19	CONFLICT MANAGEMENT
Oct 23-25	IMPROVING PERSONAL EFFECTIVENESS
Oct 23-25	EFFECTIVE LETTERS, REPORTS AND PRESENTATIONS
Oct 26-27	STRESS MANAGEMENT
Oct 30-31	HABITS OF SUCCESSFUL PROFESSIONALS
Oct 30-Nov 1	ADVANCED MS EXCEL

Lahore

Oct 02-03	MANAGERIAL TRANSITION: FROM OPERATIONAL MANAGER TO STRATEGIC THINKER
Oct 02-03	EMOTIONAL INTELLIGENCE FOR WORKPLACE SUCCESS
Oct 05-06	SKILLS IN SUPERVISION
Oct 09-13	CERTIFIED LEAN SIX SIGMA GREEN BELT
Oct 11-13	DATA ANALYSIS TECHNIQUES FOR EFFECTIVE DECISION MAKING
Oct 16-17	MANAGING WITH POWER AND INFLUENCE
Oct 16-17	INVENTORY MANAGEMENT AND WAREHOUSING
Oct 18-19	EFFECTIVE PURCHASE MANAGEMENT
Oct 18-19	FINANCIAL MANAGEMENT
Oct 23-24	E-LEADERSHIP
Oct 25-26	DESIGN THINKING FOR INNOVATION
Oct 25-27	DEVELOPMENT COURSE FOR SUPERVISORS
Oct 26-27	PROJECT MONITORING, EVALUATION AND CONTROL
Oct 30-Nov 1	TEAMWORK: GETTING PEOPLE TO WORK TOGETHER

Islamabad

Oct 02-03	CONTRACT MANAGEMENT
Oct 02-03	CRITICAL THINKING AND ANALYTICAL SKILLS
Oct 02-03	HANDLING DIFFICULT PEOPLE
Oct 02-04	TRAINING TECHNIQUES FOR TRAINER
Oct 05-06	WORKPLACE ETHICS (NEW)
Oct 09-11	INTEGRATED HSE MANAGEMENT SYSTEMS: ISO 14001 AND 45001
Oct 09-10	ESSENTIALS OF EMERGING LEADERS
Oct 11-13	WORKSHOP ON PROJECT MANAGEMENT
Oct 12-13	POSITIVE WORK ATTITUDES
Oct 16-17	DASHBOARD REPORTING AND ADVANCED DATA ANALYSIS WITH MS EXCEL
Oct 16-17	MANAGEMENT IN THE AGE OF ARTIFICIAL INTELLIGENCE
Oct 18-20	SKILLS IN GOAL SETTING AND WORK PLANNING
Oct 18-20	PRINCIPLES OF GOOD MANAGEMENT
Oct 23-24	TECHNIQUES FOR CAPITAL, BUDGETING AND FORECASTING
Oct 30-31	EFFECTIVE DELEGATING AND COACHING SKILLS
Oct 30-31	PERFORMANCE BASED MANAGEMENT
Oct 30-31	MIND OPENERS FOR MANAGERS