▶ **WeChat**

Karishma Sule

Manager - Inventory Management
Mercedes Benz India Pvt. Ltd.
PGDM - Business Design
2013-2015

AUTOMOBILE INDUSTRY

MESSAGE FROM THE DIRECTOR

Dear Readers,

It gives me great pride to introduce SAMVAD's edition every month. Our SAMVAD team's efforts seem to be paying off, and our readers seem to be hooked onto our magazine. At WeSchool, we try to acquire as much knowledge as possible and share it with everyone.

Prof. Dr. Uday Salunkhe
Group Director

As we begin a new journey with 2023, I sincerely hope that SAMVAD will reach new heights with the unmatched enthusiasm and talent of the entire team.

Here at WeSchool, we believe in the concept of AAA: Acquire Apply and Assimilate. The knowledge you have acquired over the last couple of months will be applied somewhere down the line. When you carry out a process repeatedly, it becomes ingrained in you and eventually tends to come out effortlessly. This is when you have assimilated all the knowledge that you have gathered.

At WeSchool, we aspire to be the best and unique, and we expect nothing but the extraordinary from all those who join our college. From the point of view of our magazine, we look forward to having more readers and having more contributions from our new readers.

SAMVAD is a platform to share and acquire knowledge and develop ourselves into integrative managers. Our earnest desire is to disseminate our knowledge and experience with not only WeSchool students but also the society at large.

Prof. Dr. Uday Salunkhe,
Group Director

ABOUT US

OUR VISION

"To nurture thought leaders and practitioners through inventive education."

CORE VALUES

Breakthrough Thinking and Breakthrough Execution
Result Oriented, Process Driven Work Ethic
We Link and Care
Passion

"The illiterate of this century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn." -Alvin Toffler.

At WeSchool, we are deeply inspired by the words of this great American writer and futurist. Undoubtedly, being convinced of the need for a radical change in management education, we decided to tread the path that led to the corporate revolution.

Emerging unarticulated needs and realities require a new approach in both thought and action. Cross-disciplinary learning, discovering, scrutinizing, prototyping, learning to create and destroy the mind's eye needs to be nurtured differently.

WeSchool has chosen the 'design thinking' approach towards management education. All our efforts and manifestations, as a result, stem from the integration of design thinking into management education. We dream of creating an environment conducive to experiential learning.

FROM THE EDITOR'S DESK

Dear Readers,

Welcome to the **144th** Issue of **Samvad!**

Samvad serves as a platform for exploring "Inspiring Futuristic Ideas," dedicated to delivering thought-provoking articles that enhance your understanding of management education. Our goal at WeSchool is to foster thought leadership through innovative education, and Samvad is our sincere effort to facilitate a constructive and synergistic dialogue involving students, academicians, and the corporate world.

We aspire for Samvad to become one of the most sought-after business magazines for B-school students nationwide. To realize this vision, we invite articles from all management domains, aiming to provide a holistic perspective and bridge the gap between industry experts and students through our WeChat section.

In this issue of Samvad we delve into the ever-evolving world of the automobile industry. The past decade has witnessed transformative changes in this sector, driven by technological advancements, shifting consumer preferences, and global efforts to combat climate change.

The automobile industry, once dominated by internal combustion engines, is now at the forefront of innovation with electric vehicles (EVs) leading the charge. Companies like Tesla have not only revolutionized the market but have also set new benchmarks for what consumers expect in terms of performance, range, and sustainability. The rapid adoption of EVs is complemented by advancements in battery technology, making these vehicles more affordable and accessible to a broader audience.

Autonomous driving technology is another game-changer. With companies like Waymo and traditional automakers investing heavily in self-driving capabilities, the future of transportation promises increased safety, efficiency, and convenience. However, this technological leap comes with its own set of challenges, including regulatory hurdles, ethical considerations, and the need for robust cybersecurity measures.

Sustainability is now a core focus within the industry. Automakers are investing in greener manufacturing processes, exploring alternative materials, and committing to reducing their carbon footprints.

FROM THE EDITOR'S DESK

The shift towards sustainable practices is not just a response to regulatory pressures but also a reflection of changing consumer attitudes towards the environment.

In this issue, we explore these trends and more. We take a closer look at how traditional automakers are adapting to the electric revolution, the latest developments in autonomous driving technology, and the ongoing efforts to make the industry more sustainable. We also feature insights from industry leaders and experts who share their perspectives on what the future holds for the automobile industry.

As we navigate through these transformative times, the automobile industry is not just about transportation anymore; it is about creating a sustainable, connected, and autonomous future. We hope you find this edition informative and inspiring as we journey through the roads of innovation and change together.

We encourage you to read, share and grow with us. We look forward to your thoughts and feedback.

Best Regards,
Team Samvad.

Index

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1. Could you please provide a detailed account of your professional journey,your experiences and career progression from your time at WelingkarInstitute of Management to your currentposition?

In 2015, I joined Mercedes-Benz as a 'CAReer trainee" that spanned 18 months, designed to groom future leaders. The initial phase involved various assignments, starting in my home department which was Quality. Subsequently, I diversified my experience across different business entities, with a notable stint in Chennai at Daimler India commercial vehicles & Daimler AG at Germany.

Upon returning to Pune, my focus shifted to projects related to Plant and controlling, and later, to the production Body Shop.

My motivation for embracing diverse projects was two-fold. Firstly, to establish meaningful connections with professionals across various departments. For example, during my three-month tenure in Germany,

I collaborated with counterparts, gaining valuable insights into their work culture. Secondly, I stepped out of my comfort zone by delving into finance and controlling. As a mechanical engineer, it was an enlightening experience, proving that understanding balance sheets and managing projects was within my grasp. Given my background in quality, my stint in production aimed at strengthening collaboration with our internal customer the production department. Additionally, I took on brief assignments, one involving interaction with sales teams in Mumbai and the other immersing myself in the operational intricacies as an operator for two weeks. These experiences were pivotal in shaping my decision-making skills for future roles, be it as a line manager or in the quality department.

The 18-month period was intensive, involving interactions with operators and discussions with the then MD and CEO, Mr. Dieter Zetsche. It offered a holistic view of the business, and I conducted an in-depth analysis within my department, especially on the

production line. Post this, I spent three years in the Quality Department, contributing to various projects.

In December 2019, I transitioned to the Logistics Department, overseeing the timely procurement of parts from China. The department also managed extended workbenches, ensuring just-in-time delivery of engines from local suppliers like Force Motors. This phase included a stint in the plant logistics team, where I gained insights into warehousing, line operations, part ordering, and packaging.

I remained in logistics until last year, after which I re-entered the Customer Service Teams, focusing on inventory management for a more hands-on approach to after-sales services. This shift aimed to bring me closer to customers rather than being confined to plant operations.

Throughout my career, the driving force has been a constant eagerness to explore different departments, acquire new knowledge, gain a broader understanding of the business, and immerse myself in deep dives within specific departments. This narrative encapsulates the essence of my professional journey.

2. How should traditional car companies respond to the increasing popularity of subscription models and car-sharing platforms?

I'll begin by discussing our company, specifically Financial Services (MBFS).

This division actively tracks startup trends and operations within the startup community. We are also involved in various projects in this domain, and Daimler itself strategically invests in selected startups.

Regarding car-sharing models, they show promise, especially for regular passenger vehicles rather than luxury ones – that's my observation.

Expanding our perspective, I personally do not own a house or a car, as the latter is seen as a depreciating asset; however, for millions, having a personal mode of transport by buying a car remains a cherished dream.

The car-sharing model is proving to be highly effective one and is expected to gain further traction, extending into Tier 2 and Tier 3 cities. As an organization, it is my personal opinion that, we can think of future possibilities of seamlessly integrating this model into our business strategies, if it is feasible, recognizing it as a valuable addition.

I'd like to emphasize the consensus on the effectiveness of the car-sharing model in Tier 2 and Tier 3 cities. An interesting example, in my personal opinion, worth noting is the success of RodBez, a startup that garnered attention, even making its mark on platforms like Shark Tank India. This case vividly illustrates the potential and acceptance of car-sharing initiatives, particularly in smaller cities, underscoring the entrepreneurial dynamism within the automotive sector.

Exhibit 4 - The Subscription Business Value Chain

Sourcing vehicles		Building tech	Acquiring & managing customers			Managing operations & fleet		Re-marketing vehicles
Vehicle procurement	Vehicle financing	Tech platform	Marketing	Sales	Delivery & logistics	Customer service	Operations	Re-marketing
Buying vehicles, negotiating rates	Financing and insuring vehicles	Building core software and tools	Customer acquisition (online and offline)	Customer onboarding	Delivering vehicle to customer	CRM, incident management	Maintenance, repairs, cleaning, etc.	Re-selling vehicles to secondary buyers

Source: BCG analysis.

3. With the rise of connected cars and 5G, what are the biggest opportunities and challenges you see for the future of car ownership and driving experiences?

The prominent opportunity I identify in connected cars lies in the integration with 5G technology. This advancement notably enhances post-sales operations by facilitating improved inventory management and optimizing the supply chain. The utilization of data allows for strategic planning with Tier 1 and Tier 2 suppliers. As an Original Equipment Manufacturer (OEM), our engagement involves dealing with numerous suppliers, each having sub-suppliers. Comprehensive availability of data proves invaluable for effective planning.

However, a notable challenge emerges from the sheer volume of data generated. While the implementation of 5G is essential for efficient data sorting, the critical aspect lies in the analysis and utilization of this data. It prompts questions about how effectively we are utilizing tools like Artificial Intelligence (AI) to forecast our needs. Even though we have connected cars on Indian roads, we are continuously improving data utilization and there is a wide scope of further leveraging it for our customers.

Despite having an abundance of data, the current practice primarily relies on historical data for parts ordering. For instance, planning for an increased demand for wipers during the monsoon season is based on past data analysis of wiper sales. The potential of connected cars and AI capabilities lie in transitioning from this retrospective approach to a more proactive 'predictive maintenance'.
In essence, the integration of connected cars with 5G offers both advantages and challenges, emphasizing the need for more sophisticated data utilization strategies in the automotive industry.

4. As cars become more connected and generate data, how can automakers utilize this information to improve efficiency in their supply chains?

Certainly, as previously mentioned, our current utilization of data has room for improvement. While we do collect data, particularly in sales, the process still heavily relies on human input. For instance, during cold calling and subsequent interactions with customers at the dealership, sales personnel gauge the customer's receptiveness to buying a car. This subjective assessment is then manually entered into the system. Presently, our approach is notably human-centric.

To enhance our data utilization, we need to transition from this reliance on human intuition. Implementing an Artificial Intelligence (AI) tool during customer interactions could be pivotal. Such a tool could capture and analyze not only the customer's voice but also their body language, providing a more comprehensive understanding of their inclination to make a purchase. By integrating advanced technology in this manner, we can refine our predictive capabilities and optimize the supply chain accordingly.

Undoubtedly, there's still a significant distance to cover in achieving a more sophisticated and technologically driven approach in our data utilization processes.

"What is your biggest challenge in the next 2–3 years?"
Share of respondents (%)

Other — 6
Staffing and labor cost — 6
Near-term recession — 7
Sustainable supply — 81
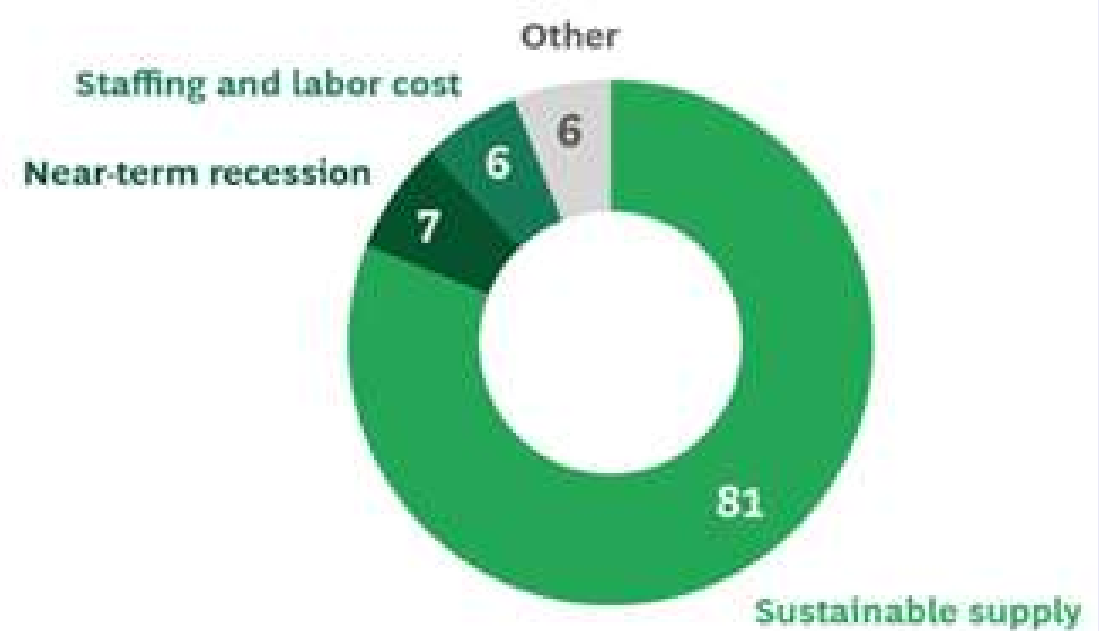
Source: BCG analysis.

5. Beyond government mandates, how can the Indian auto industry become a leader in sustainability and innovation?

Many companies have established diverse targets to achieve carbon neutrality, aiming for milestones ranging from 2030 to 2040. However, the efficacy of these goals relies not only on the transition to electric vehicles but also on the sustainability of the energy sources powering them. The source of electricity becomes a critical factor; if it primarily relies on coal, the environmental benefits of electric cars diminish.

Maintaining a delicate balance between Internal Combustion (IC) engines and electric vehicles is imperative and the customers preference and market conditions will decide the pace of this transformation to BEVs (Battery Electric Vehicles). It's not only about the end product but also the associated byproducts. Consideration must be given to the disposal of components, especially

for electric vehicles with batteries. Addressing questions related to the responsible disposal of batteries, as well as the environmental impact of materials used in manufacturing, such as lightweight materials and advanced paints, is crucial for the entire automotive industry. These considerations are vital for the sustainable practices of all car companies.

6. Looking back on your journey in the auto industry, what one piece of advice would you tell your younger self aspiring to be in this field?

Certainly, the initial piece of advice I would offer my younger self is to emphasize the importance of focus. Juggling multiple projects may seem enticing, but it often results in spreading oneself too thin. Recognizing the limitations of time and energy is crucial. Therefore, channeling efforts into a singular topic allows for more effective outcomes.

Another valuable lesson I've learned is the significance of having mentors and learning from accomplished leaders. Seeking guidance from mentors, whether within or outside the company, offers insights into personal development. Through reflective discussions with mentors, one gains a deeper understanding of oneself, often revealing aspects unnoticed in the routine.

On a more personal note, I would stress the importance of early financial planning. Commencing investments in the early twenties is a prudent decision. With the wealth of knowledge acquired through academic studies and exposure to various case studies, it is essential to translate this understanding into practical financial habits. Starting to save and invest early can significantly impact one's financial well-being in the long run.

INNOVATIONS IN AUTOMOTIVE ADVERTISING

Winner

Shreeja C.R
Aishwarya M.C
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BIMTECH

Introduction

In an age defined by unprecedented technological progress and dynamic shifts in consumer preferences, the automotive industry stands as a beacon of innovation and adaptation. Amidst the clamor for consumer attention and brand loyalty, automotive companies are redefining their advertising strategies, leveraging cutting-edge technologies and personalized approaches to captivate audiences in novel ways. This analysis explores the transformative innovations propelling the automotive advertising landscape into the future, spotlighting key trends such as mobile optimization, customer journey mapping, personalized video content, and beyond. As the industry accelerates towards a digitally-driven future, understanding these innovations is paramount for automotive brands seeking to stay ahead of the curve and forge deeper connections with their audiences.

Understanding the Mobile Imperative: Engaging On-the-Go Consumers

In today's digitally-driven world, mobile devices serve as the primary gateway for consumers to research, discover, and engage with automotive brands. Research indicates that a significant portion of car buyers kickstart their purchasing journey on mobile devices[1]. Thus, mobile optimization has become a critical aspect of automotive advertising strategies.

Mobile optimization involves various elements, including responsive website design, fast loading speeds, intuitive navigation, and mobile-friendly content formats. By ensuring seamless mobile experiences, automotive brands can reduce bounce rates and maximize engagement. Additionally, leveraging mobile-specific ad formats like interactive rich media ads and location-based targeting enhances message relevance and increases conversion rates.

Mapping the Customer Journey: Personalization at Every Touchpoint

Understanding the intricate pathways consumers take on their journey to purchasing a vehicle is essential for automotive marketers.

From initial awareness to post-purchase support, consumers interact with various touchpoints, both digital and offline. By mapping the customer journey and deploying personalized campaigns tailored to each stage, automotive brands can create cohesive experiences that resonate with consumers.

This process involves identifying key touchpoints and interactions, then leveraging data analytics and machine learning to gain insights into consumer behaviors and preferences. By delivering highly targeted and relevant messaging, brands can drive higher engagement and conversion rates. Dynamic content personalization techniques, such as dynamic ads and real-time recommendations, further enhance consumer experiences.

Elevating Customer Service: Building Trust Through Personalized Support

Exceptional customer service has emerged as a vital differentiator in the automotive industry. From pre-purchase inquiries to post-purchase support, providing timely and personalized assistance across all touchpoints is crucial for fostering trust and satisfaction.

Automotive brands can leverage tools like live chat, chatbots, and virtual assistants to enhance the customer service experience. AI-powered solutions enable immediate assistance, answering questions and resolving issues in real-time. Sentiment analysis and natural language processing algorithms help

brands proactively engage with customers, resolving potential issues before they escalate.

Personalization of Videos: Engaging Audiences Through Immersive Content

Video content has become a powerful tool for automotive marketers to capture consumer attention. With the ability to convey emotion and showcase product features, video plays a significant role in advertising strategies.

Innovations in video production technologies enable the creation of immersive, personalized experiences. From interactive 360-degree videos to virtual reality test drives, brands leverage cutting-edge techniques to engage audiences. By harnessing data-driven insights, brands tailor video content to individual preferences, driving meaningful engagement.

Embracing Messaging Applications: Facilitating Real-Time Engagement

Messaging applications offer a unique opportunity for automotive brands to connect with consumers in real-time. Platforms like WhatsApp and Facebook Messenger enable personalized communication, driving engagement and conversions.

AI-powered chatbots and automated messaging systems provide immediate assistance, enhancing the overall customer experience. By leveraging data analytics and machine learning, brands deliver highly targeted and

relevant messages, fostering deeper connections and driving brand loyalty.

Optimizing for Voice Search: Meeting Modern Consumers' Needs

Voice search technology has gained popularity, with millions of consumers using voice-enabled devices to access information. Optimizing digital assets for voice search ensures maximum visibility and relevance.

This optimization involves natural language, long-tail keywords, and structured data markup to make content more accessible to voice-enabled devices. By delivering personalized responses to voice search queries, brands provide relevant information that drives engagement and conversions.

Innovative Campaigns in Action: Success Stories

To illustrate the impact of innovative advertising strategies, let's examine notable examples from the automotive industry.

Hyundai Shopper Assurance: Simplifying the Car Buying Experience

Hyundai's Shopper Assurance program streamlines the car buying process, offering transparent pricing and flexible test drives. This customer-centric approach differentiates Hyundai, fostering trust and transparency.

Volvo XC40 Recharge: Engaging Video Campaigns

Volvo's XC40 Recharge campaign uses humorous and informative video content to drive awareness of its electric vehicles. Through captivating storytelling, Volvo positions itself as a forward-thinking brand focused on sustainability.

Ford Mustang Mach-E: Virtual Launch Event and Influencer Partnerships

Ford's Mustang Mach-E campaign generates excitement through virtual launch events and influencer partnerships. By leveraging interactive elements and celebrity endorsements, Ford creates buzz around its electric Mustang.

Conclusion: Forging Ahead in a Dynamic Landscape

As the automotive industry evolves, so do advertising strategies. By embracing innovation and leveraging cutting-edge technologies, automotive brands can create personalized, engaging experiences that resonate with consumers. With a strategic focus on understanding consumer behaviors and delivering relevant messaging, brands can chart a course for success in an ever-evolving landscape.

In conclusion, the future of automotive advertising lies in the seamless integration of technology and creativity to deliver personalized, immersive experiences. By staying abreast of emerging trends and technologies, automotive brands can drive engagement, foster loyalty, and achieve sustainable growth.

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Innovative Leadership in EV Technology

Runner Up

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Introduction

In recent years, the automotive industry has witnessed a monumental shift towards sustainable transportation solutions, primarily led by the rapid advancement of Electric Vehicle (EV) technology. As the world grapples with environmental challenges and seeks to reduce its carbon footprint, innovative leadership in EV technology has emerged as a crucial driver of change. This article explores the pivotal role of pioneering leadership in shaping the landscape of EV technology, backed by illustrations, statistics, images, and graphs to underscore key points.

The Rise of Electric Vehicles:

The rise of electric vehicles has been nothing short of revolutionary, with global EV sales surging year after year. According to data from Bloomberg NEF (BNEF), electric vehicle sales accounted for over 4% of total global car sales in 2020, a significant milestone in the transition towards electrification (BNEF, 2020). Figure 1 illustrates the steady growth trajectory of EV sales over the past decade.

[Figure 1: Graph showing the increase in global EV sales from 2010 to 2020]

Figure 1.1 Global electric car stock in selected regions, 2010-2022
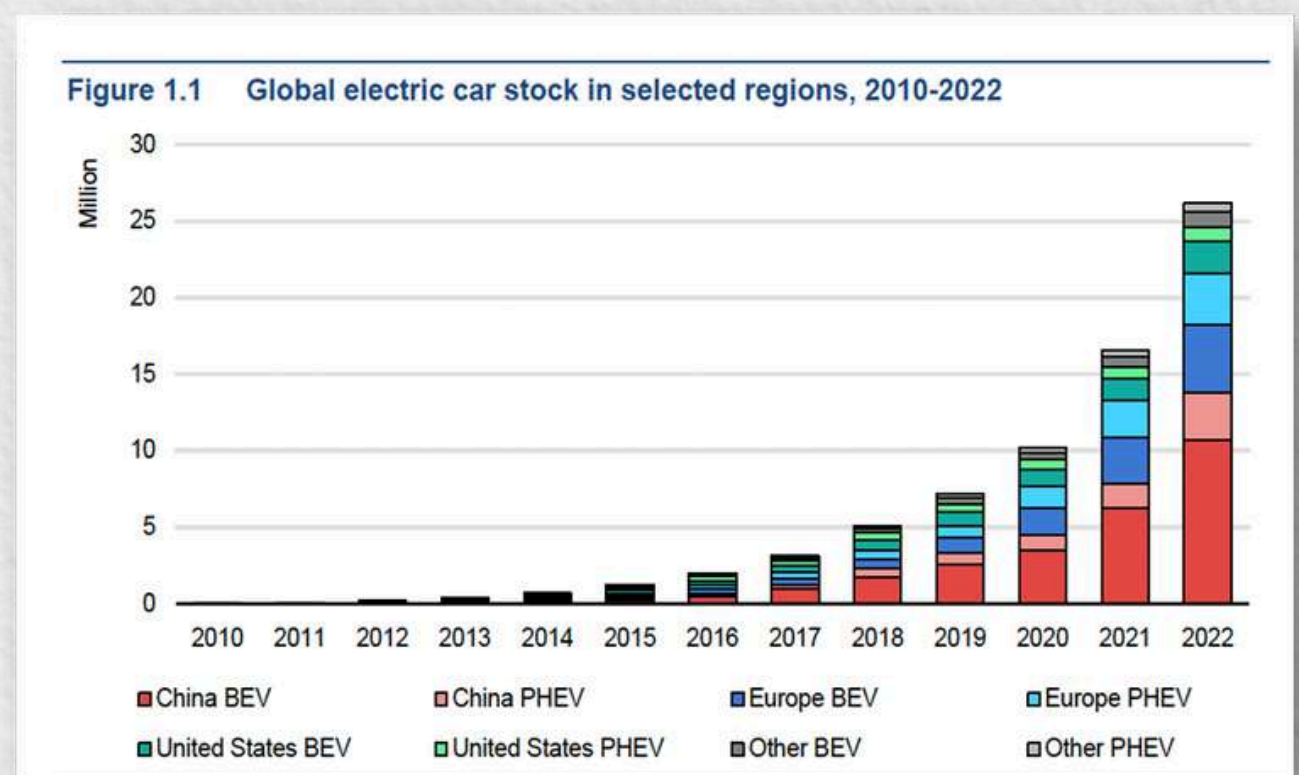
Innovative Leadership Driving EV Technology:

At the forefront of this transformation are visionary leaders who have championed innovation in EV technology. Companies like Tesla, led by Elon Musk, have played a pivotal role in pushing the boundaries of electric vehicle design, performance, and accessibility. Tesla's relentless focus on battery technology, range optimization, and autonomous driving capabilities has set a new standard for the industry. Furthermore, Tesla's Gigafactories, strategically located around the world, are instrumental in scaling up production and driving down costs, making EVs more affordable and

appealing to a broader market. Figure 2 highlights the expansion of Tesla's Gigafactory network and its impact on EV production capacity.

[Figure 2: Map showing the locations of Tesla's Gigafactories globally]

Beyond Tesla, traditional automakers like Volkswagen, General Motors, and Ford have also embraced electric mobility, investing billions of dollars in EV development and manufacturing. These companies recognize the urgency of transitioning towards zero-emission vehicles and are leveraging their expertise and resources to accelerate the adoption of EVs.

Government Support and Policy Initiatives:

In addition to industry leadership, government support and policy initiatives play a crucial role in driving the widespread adoption of electric vehicles. Countries around the world are implementing various incentives, subsidies, and regulations to encourage consumers to switch to electric cars.

For instance, Norway stands out as a global leader in EV adoption, with electric vehicles accounting for over 50% of new car sales in 2020 (IEA, 2021). This remarkable achievement is attributed to a combination of generous incentives, including tax exemptions, toll exemptions, and free parking for EV owners.

Figure 3 illustrates the impact of government incentives on EV adoption rates in select countries.

[Figure 3: Bar graph comparing EV adoption rates in countries with and without significant government incentives]
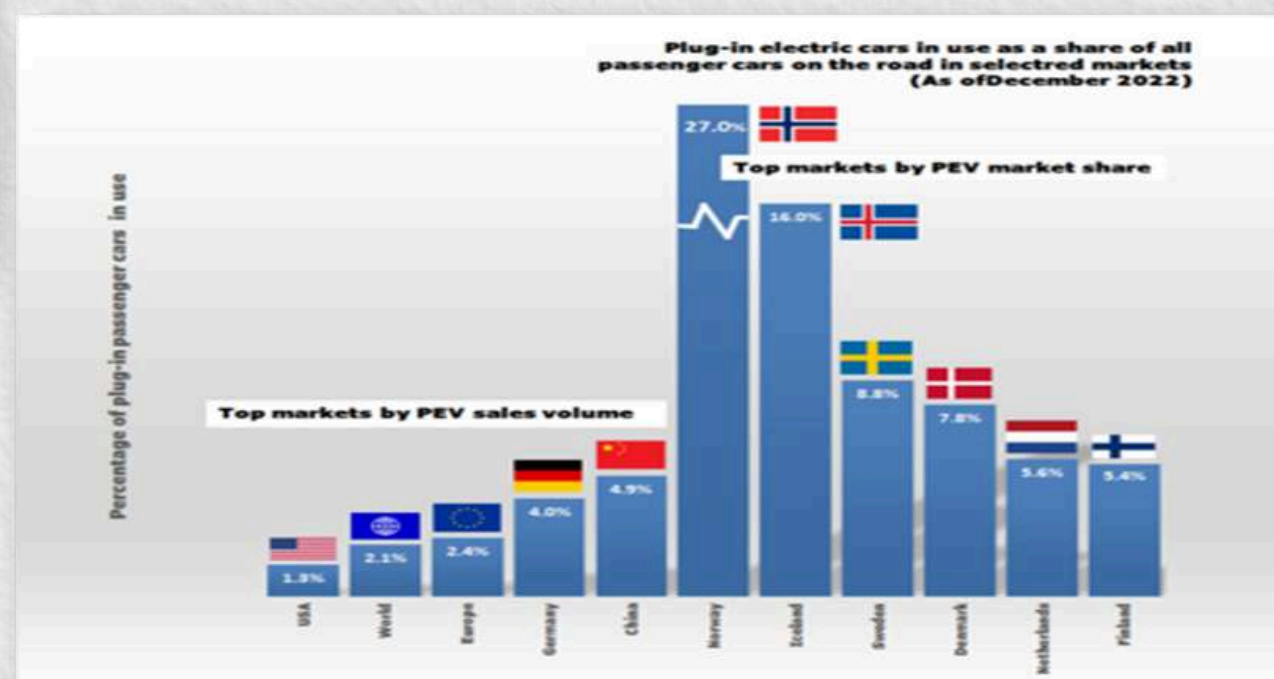
Challenges and Opportunities: Despite the remarkable progress made in EV technology, significant challenges remain. One of the most pressing issues is the need to develop a robust charging infrastructure to support the widespread adoption of electric vehicles. Range anxiety continues to be a concern for many consumers, highlighting the importance of expanding charging networks and improving charging speeds.

Moreover, the environmental impact of battery manufacturing and disposal remains a key area of focus for industry leaders and policymakers. Efforts to develop sustainable battery technologies and implement recycling programs are critical to mitigating the environmental footprint of electric vehicles.

Embracing Disruption: A Core Trait

The most successful EV leaders share a common trait: the ability to embrace disruption. In an environment where traditional automotive giants are facing stiff competition from new entrants, leaders need to be adaptable, constantly seeking new technologies and business models to stay ahead of the curve.

Elon Musk, CEO of Tesla and SpaceX, exemplifies this approach. His disruptive vision led him to pioneer the development of luxury electric vehicles, challenging the dominance of established car manufacturers. Tesla's focus on vertical integration, encompassing battery production, charging infrastructure, and self-driving technology, further highlights Musk's commitment to reshaping the transportation landscape [Source: Investopedia].

Beyond the Car: Addressing Infrastructure Gaps

While innovation in vehicle technology is crucial, addressing the infrastructure challenges hindering widespread EV adoption is equally vital. Leaders in this space are tackling issues like limited charging station availability and the need for faster charging times.

Stani Kozlov, CEO of ChargePoint, a leading provider of EV charging infrastructure, is paving the way for a more robust charging network. Under Kozlov's leadership, ChargePoint has installed over 174,000 charging ports across North America and Europe, making it one of the largest EV charging networks globally [Source: ChargePoint].

Thinking Beyond the Grid: Sustainable Solutions

Innovative leaders understand the need for sustainable and environmentally conscious solutions across the entire EV ecosystem. This includes exploring alternative battery materials, utilizing renewable energy sources for charging, and developing recycling processes for spent batteries.

Jeff Dahn, a professor at Dalhousie University and Tesla battery advisor, is a pioneer in lithium-ion battery research. Dahn's focus on extending battery life and developing new sustainable materials is crucial for improving the environmental impact of EVs and reducing reliance on traditional resources [Source: The Globe and Mail].

Looking Ahead: The Road to a Sustainable Future

The future of the EV industry rests on the shoulders of innovative leaders who are committed to:

- Continuous innovation: Pushing the boundaries of technology to develop more efficient, affordable, and sustainable EVs.
- Infrastructure development: Expanding charging networks and exploring alternative charging solutions like wireless charging and battery swapping.
- Sustainability focus: Minimizing the environmental impact of EVs throughout their lifecycle, from

manufacturing to disposal.

- Collaborative approach: Fostering partnerships between different stakeholders to accelerate the transition to a clean energy future.

By embracing these core principles, innovative leaders in the EV space can ensure a sustainable and prosperous future for transportation and contribute significantly to combating climate change.

Conclusion:

In conclusion, innovative leadership is driving the rapid evolution of electric vehicle technology, paving the way for a more sustainable future. Visionary companies, supported by government policies and incentives, are making significant strides in advancing EV technology and expanding market adoption. However, challenges such as charging infrastructure and environmental sustainability must be addressed collaboratively by industry stakeholders and policymakers to ensure the long-term success of electric vehicles. By harnessing the power of innovation, leadership, and collaboration, we can accelerate the transition towards a greener, cleaner transportation ecosystem.

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Quality Management in Auto Manufacturing

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Quality Management is a very crucial section in every industry including automobiles. It sometimes becomes the differentiation point between various competing firms. In the automotive industry, it becomes very vital for the manufacturers to ensure that products produced are of high quality that too consistently and make sure the safety of consumers.

In the automotive manufacturing sector, quality control refers to the methodical processes and procedures used to make sure the vehicle satisfies all requirements for quality set by the organization, regulatory agencies, and other parties. It involves several steps, including testing, monitoring, and inspection, which assist in resolving all mechanical problems and meeting all compliance standards.

Significance of Quality Management in the Automotive Industry

Quality management in the automotive industry is increasingly vital for timely production, cost reduction, superior products, regulatory compliance, and customer satisfaction. Effective quality control expedites market release, preventing production delays. It also cuts costs by eliminating rework. Superior products enhance revenue and consumer appeal. Customer satisfaction is paramount while poor quality tarnishes brand image and discourages buyers. Efficient quality management ensures smooth production, cost savings, superior products, compliance, and consumer loyalty.

Why are Core Quality Tools important?

In manufacturing, poor-quality products and processes cost money. The top companies keep these costs (called COPQ i.e. Cost of Poor Quality) below 1%, while weaker ones pay 5% or more. This means they waste five times more on fixing mistakes, redoing work, and dealing with recalls compared to the best performers.

To avoid these high costs, manufacturers can use five key tools to identify and fix problems early on, especially critical ones that could cause major issues after a product launch. This involves better communication and collaboration between manufacturers and their customers.

5 Core Quality Tools used in Manufacturing/Automotive Industry

·Advanced Product Quality Planning (APQP)

The Advanced Product Quality Planning (APQP) process framework is used to develop new goods or processes with defined inputs and outputs and time-based milestones. This document simplifies quality planning and standardizes communication, enabling the producer to satisfy customer needs in a better manner. The APQP process consists of 5 phases:

Phase 1: Product Planning

Phase2: Product Design and Development

Phase3: Process Design and Development

Phase 4: Product and Process Validation

Phase5: Feedback, Assessment and Continuous Improvement

The Production Parts Approval Process (PPAP) handbook is a set of rules used in manufacturing to ensure that parts meet the agreed-upon design and quality standards. This process helps both suppliers and customers by outlining the steps needed for getting approval for new parts. It works for all types of parts and materials, and by following a consistent approach, helps to avoid delays and any issues with parts not meeting requirements

The PPAP ensures quality through 18 elements:

i.Design Records: Customer-approved drawings or models.

ii.Change Documents: Details of any part revisions.

iii.Customer Approvals: Customer sign-off on sample parts.

iv.DFMEA: Analysis of potential design failures.
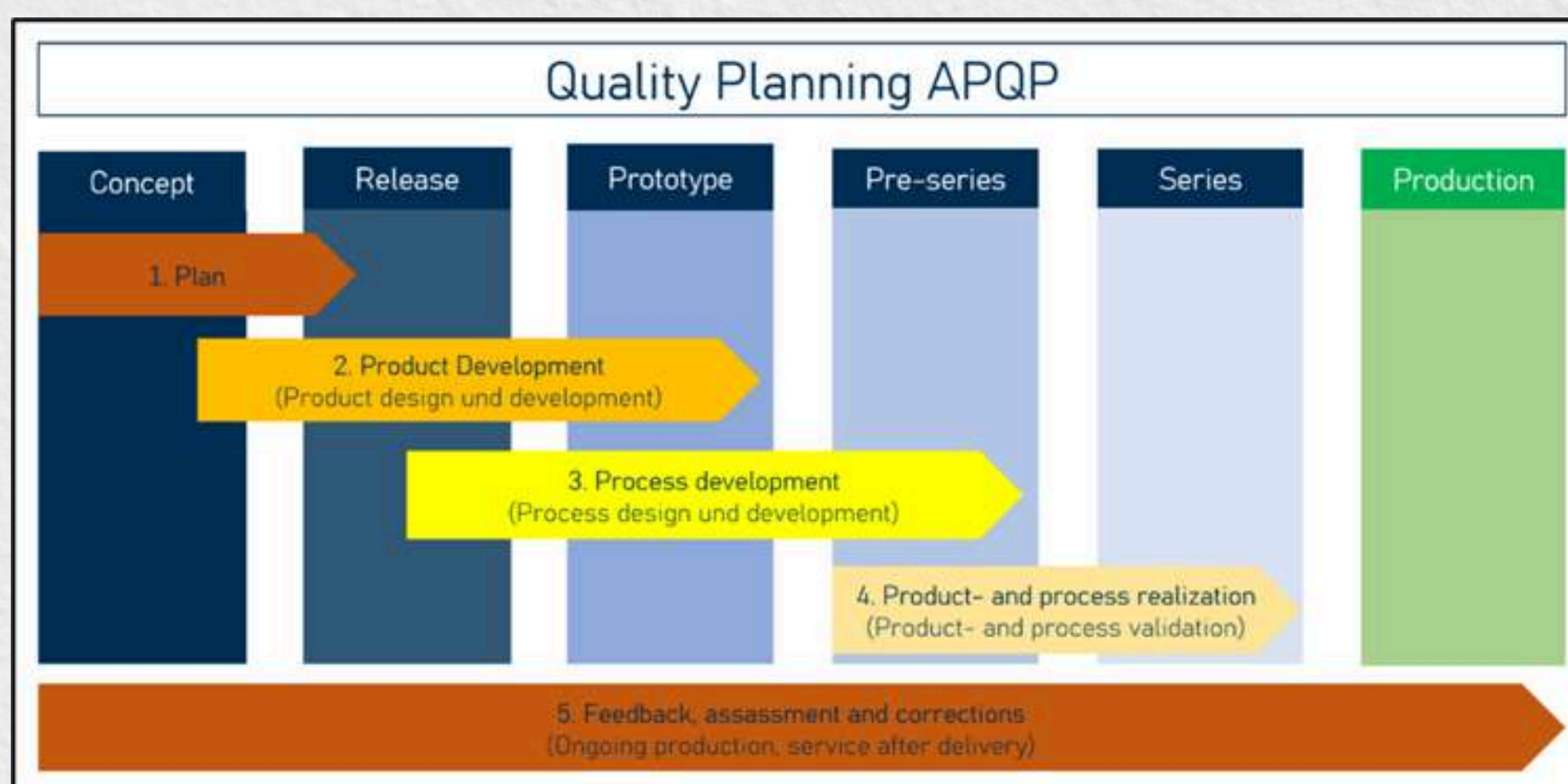
v.Process Flow Diagrams: Visualize each production step.

vi.PFMEA: Identify potential process failures.

vii.Control Plan: Maintains consistent quality during production.

viii.Measurement System Analysis: Ensures measurement equipment accuracy.

ix.Dimensional Results: Pass/fail evaluation of part measurements.

x.Test Results: Summaries of material and performance testing.

xi.Process Studies: Evidence of reliable and controlled production steps.

xii.Laboratory Documentation: Verifies lab qualifications for testing.

xiii.Appearance Approval Report: Customer confirmation on final product appearance.

xiv.Sample Products: Examples from the initial production run.
xv.Master Sample: Customer and supplier-approved reference part.
xvi.Checking Aids List: Details of all inspection and measurement tools.
xvii.Customer Specific Requirements: Documentation of any unique customer needs.
xviii.Part Submission Warrant: Summarizes the entire PPAP package submitted.
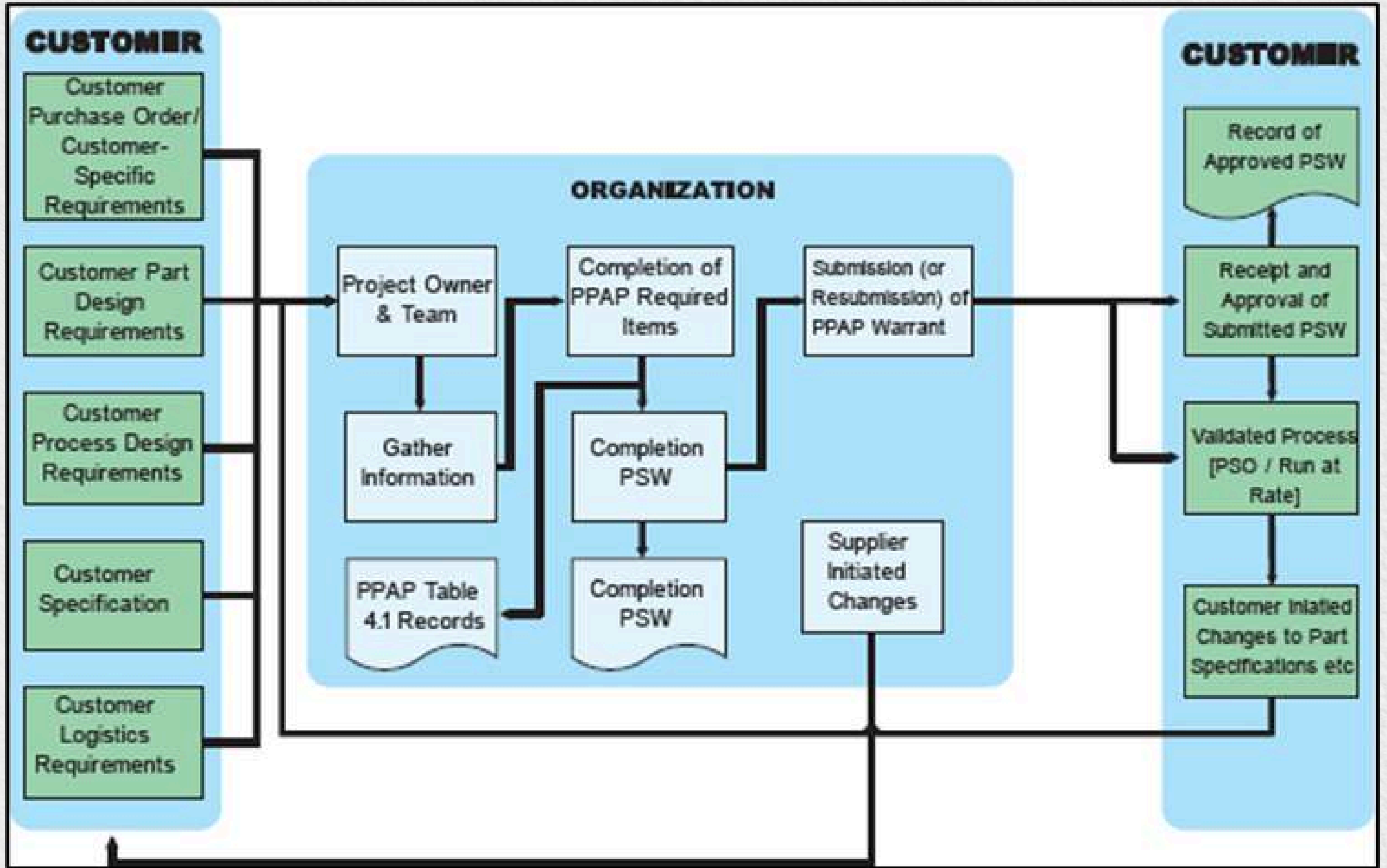
Failure Mode and Effects Analysis (FMEA)

Failure Mode and Effects Analysis (FMEA) is an analytical technique used to ensure possible issues have been considered and resolved during development of new products and processes. The evaluation and analysis process includes risk assessment. Three criteria are used to prioritize the risk analysis in FMEA:

Severity: How much of an impact does the risk have on clients?

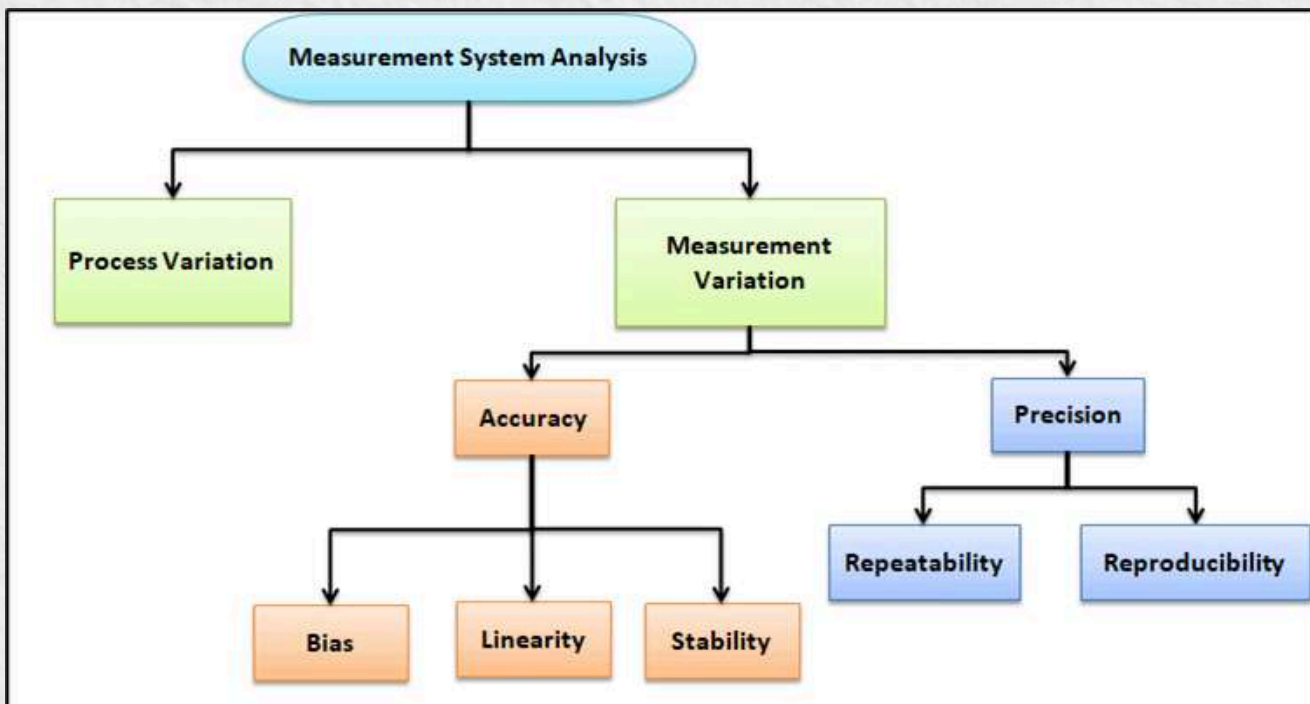**Occurrence:** How frequently is there a chance of this?

Detection: How simple is it to find the danger?
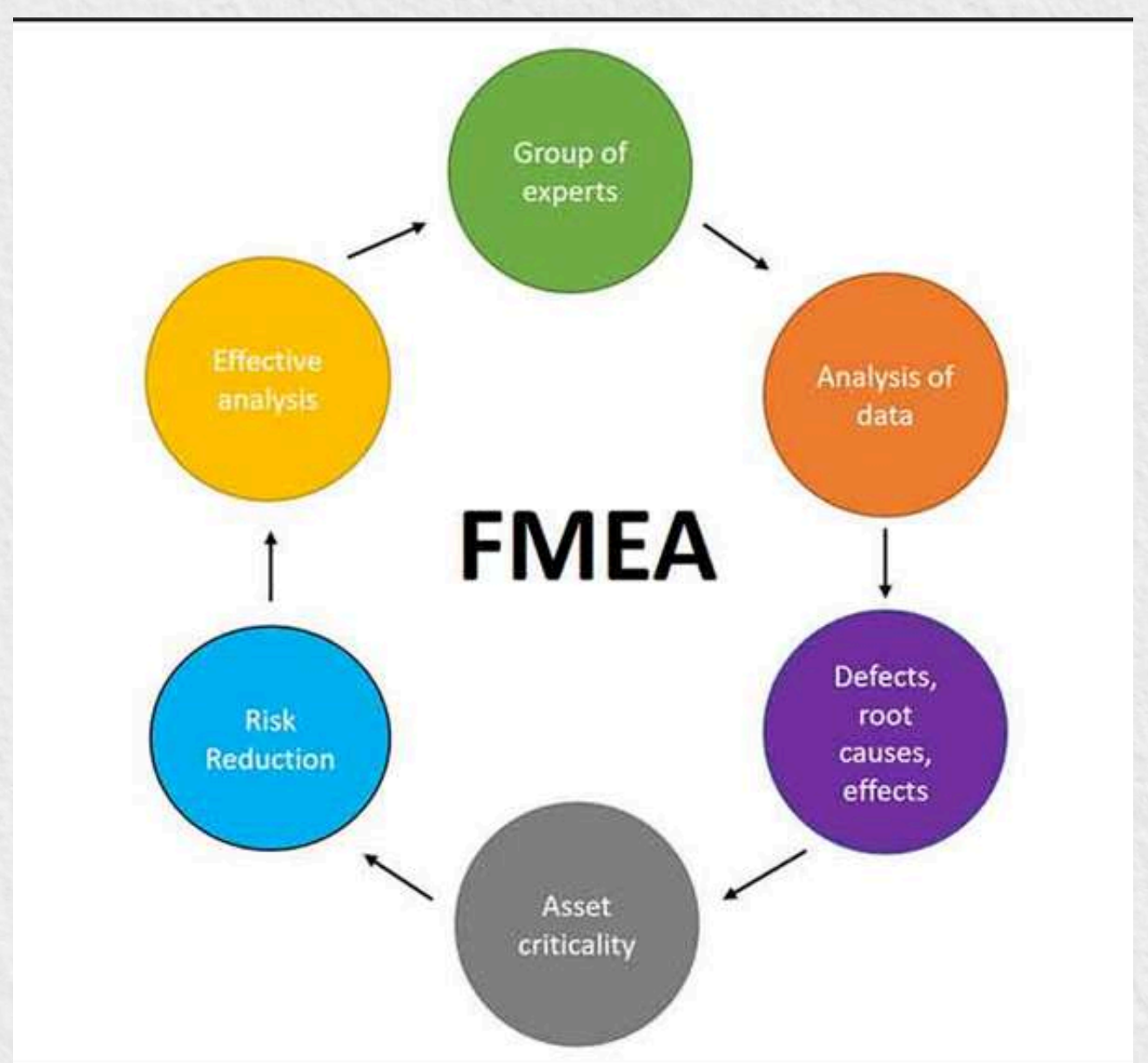
Measurement Systems Analysis (MSA)

MSA is a statistical check-up for your measurement system. It ensures the system is reliable and consistent by identifying sources of error. It helps answer the question: Are our measurements accurate and precise enough?

MSA focuses on two aspects of measurement:

1.Accuracy: How close the measurements are to the true value.

- Stability: Whether the accuracy stays consistent over time.
- Linearity: Whether the accuracy remains consistent across different measurement ranges.
- Resolution: The smallest difference the system can reliably detect.
- Bias: Any consistent difference between measured values and the true value.

2.Precision: How consistent the measurements are with each other.

- Repeatability: Whether the same person gets the same results when measuring the same part multiple times.
- Reproducibility: Whether different people get the same results when measuring the same part.

By analyzing these factors, MSA helps identify potential issues with the measurement process, leading to improved data and decision-making.

Statistical Process Control (SPC)

Statistical Process Control (SPC) is a statistical approach to quality control that gathers and examines variability data from process and product measurements. Its objective is to identify process capability and identify areas that require corrective action. Manufacturing variation is divided into two classes:

I.Common cause variation- Normal variation that is a byproduct of the standard procedure.

II.Special cause variation- Variation that is unusual and not a part of the regular process.

SPC tools:

i.Cause-and-effect diagram

ii.Check sheet

iii.Control chart

iv.Histograms

v.Pareto chart

vi.Scatter diagram

 vii.Stratification

Quality Management System (QMS)

QMS is a structured framework of policies, processes, and procedures for planning and executing quality control and quality assurance activities within an organization. QMS aims to ensure that products or services consistently meet or exceed customer requirements and expectations while complying with applicable regulations
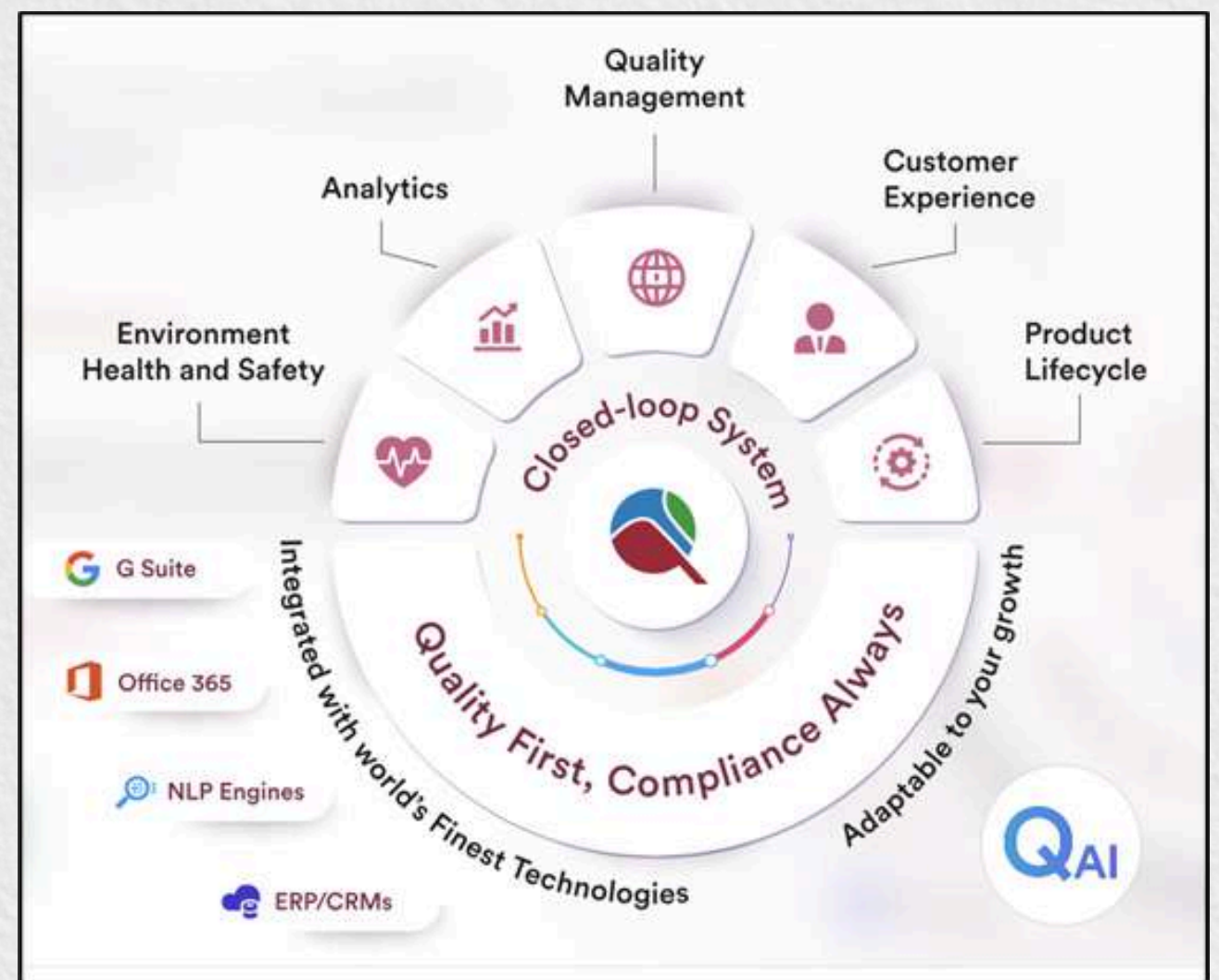
and standards. It involves systematic monitoring, measurement, and improvement of processes. QMS is implemented across various industries to enhance product quality, customer satisfaction, and overall business success.

There are various softwares in market which helps in Quality audits, checks and ISO standard compliance along with standardizing the quality process, controlling the processes etc. which are popularly called Quality Management Systems (QMS). Some of the softwares are Qualityze, Master Control QMS, Ideagen etc.

Benefits of Automotive Quality Management System

A robust QMS is crucial in the automotive industry. It ensures vehicles and parts meet quality standards by proactively detecting and resolving issues before production completion. This continuous improvement fosters informed decision-making based on data and adherence to safety-oriented ISO standards. Ultimately, QMS optimizes resource allocation, reduces waste, and minimizes risks, leading to faster delivery, increased customer satisfaction, and enhanced brand loyalty. This translates to cost reduction, improved efficiency, and ultimately, a safer and more successful automotive sector.

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Navigating the Fast Lane: Innovations in Automotive Advertising

National Finalist

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The automotive industry finds itself at a crossroads, driven by a confluence of powerful forces. Technological advancements are blurring the lines between traditional vehicles and tech marvels, consumer preferences are shifting towards sustainability and personalization, and environmental concerns demand a cleaner future for mobility. In this dynamic landscape, traditional marketing approaches are no longer sufficient to capture the attention and loyalty of car buyers.

To stay ahead of the curve, automakers are embracing innovative advertising strategies that leverage the power of data, personalization, and emerging technologies. These strategies move beyond generic features and specifications, instead showcasing the unique value proposition that resonates most deeply with each audience segment. This data-driven approach fosters a deeper connection between the brand and the individual, fostering trust and loyalty that transcends the fleeting moment of an advertisement. The future of automotive advertising is about building relationships, fostering trust, and becoming a trusted partner on the journey towards a more sustainable and personalized mobility experience.

This article explores the evolving landscape of automotive advertising, highlighting key trends and innovations shaping the industry:

Data-Driven Targeting and Personalization:

In today's data-rich environment, automakers are harnessing the power of customer data to personalize their advertising efforts. By analyzing past purchase behavior, demographics, and online interactions, they can create targeted campaigns that resonate with specific audience segments. This data-driven approach allows for:

More relevant messaging: Ads tailored to individual needs and preferences, showcasing features and benefits that matter most to each customer.

Increased engagement: Personalized content creates a more engaging experience, leading to higher click-through rates and conversion rates.

Optimized campaign performance: Data insights enable advertisers to refine their strategies based on real-time performance metrics, maximizing their return on investment (ROI).

For instance, an automaker might target potential buyers interested in electric vehicles with ads highlighting the environmental benefits, tax incentives, and charging infrastructure availability in their area.

The Rise of Interactive and Immersive Experiences:

Consumers today crave interactive and immersive experiences that go beyond traditional static ads. Automotive advertisers are responding to this demand by incorporating:

Augmented Reality (AR): AR apps allow users to virtually "test drive" vehicles, visualizing them in their own driveway or experiencing different configurations.

Virtual Reality (VR): VR experiences can transport potential buyers to breathtaking landscapes or racetracks, showcasing the capabilities and performance of a car in a simulated environment.

Interactive video ads: These ads allow viewers to explore different features of a car, customize their dream vehicle, or even schedule a test drive, all within the video itself.

These interactive formats provide a deeper level of engagement and emotional connection with the brand, leaving a lasting impression on potential buyers.

Embracing the Power of Social Media and Influencer Marketing:

Social media platforms have become powerful tools for automotive brands to connect with their target audience. Engaging content like behind-the-scenes glimpses, product unveilings, and user-generated content can generate excitement and brand awareness. Additionally, partnering with relevant influencers who resonate with the target audience can amplify the reach and impact of marketing campaigns.

For example, a collaboration with an eco-conscious social media personality could promote an automaker's commitment to sustainability and electric vehicle offerings.

The Integration of Artificial Intelligence (AI):

AI is playing an increasingly important role in automotive advertising by:

Chatbots: AI-powered chatbots can answer customer queries in real-time, providing personalized support and guidance throughout the car buying journey.

Dynamic creative optimization: AI algorithms can analyse audience data and automatically generate ad variations that are most likely to resonate with each individual viewer.

Predictive analytics: AI can predict customer behaviour and preferences, allowing advertisers to deliver targeted messaging at the most opportune moments.

By leveraging AI, automakers can create a more seamless and personalized customer experience, ultimately driving conversions and building brand loyalty.

The Evolving Role of Traditional Media:
While traditional media channels like television and print advertising still hold value, their role is evolving. Automakers are integrating these channels with their digital strategies, creating cohesive campaigns that reach consumers across multiple touchpoints. For example, a television commercial might direct viewers to a specific landing page or social media channel for further information and engagement.

Looking Ahead: The Future of Automotive Advertising
The future of automotive advertising is characterized by continuous innovation and adaptation. As technology advances and consumer preferences evolve, automakers will need to stay agile and embrace new strategies to navigate the ever-changing landscape. By harnessing the power of data, personalization, and emerging technologies, they can create engaging and effective advertising campaigns that resonate with car buyers of today and tomorrow.

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WeAchievers

National Finalist
Avatar: The Ultimate CEO , IIM Kozhikode

Debojyoti Deb

1. First of all, congratulations. How do you feel about it?
I didn't win anyone of them but reaching National Finals for both the competitions did feel great and it was a feeling which I had never experienced since before this I had never taken part rigorously in B-school competitions let alone reach finals.

2.Could you brief us about this competition? What were the hurdles you faced and how did you overcome them?
The competition unfolded in three distinct rounds:
Round 1: Quiz Round: This round assessed my grasp of core business principles across various domains like marketing, finance, and operations. It tested my ability to analyze problems and formulate solutions that consider all stakeholder interests. (On unstop)

Round 2: Twitter Battle: This unique challenge simulated a real-time public relations crisis. As the CEO navigating a brand reputation freefall, I had to craft a concise and compelling message on Twitter to regain public trust for 3 different companies. It highlighted the importance of clear communication and strategic messaging in today's digital age.

Round 3: On-campus Media Trial: The final round had a case study wherein once you play the role of co-founders facing a critical company issue and another time you play the role of media personnel grilling the ceo's. So a simulation of a high-pressure press conference was created . This round emphasized the importance of teamwork, adaptability, and the ability to clearly articulate complex information under duress.

Final round had a total of 10 teams which had a total of 25 members

Hurdles Faced:- The quiz was very tricky since it was based on situations and not your average theory questions or fact check questions. Had to imagine like the stakeholder in question and answer accordingly. Twitter round had 3 different situations wherein your firm had taken decisions and you needed to handle the media outrage in twitter ,I had never used twitter before to tweet something so that was again a first time experience plus the cases were timed and during that time we had mid term quizzes also going on so there was also a time crunch.

During On-campus round(finals) I had to take interviews once as a news reporter and grill a CEO of a firm due to the mishap that firm had caused and I had to face the same once I had to act as CEO . Acting as a CEO when you are on the firing line was tough I had to analyse the stakeholders involved the firm's history and answer the questions by news reporters accordingly. Keeping a cool demeanor and being empathetic were the qualities I used to handle this round.

3.What were your key learnings and takeaways?
Both the competitions were a transformative experience. It pushed me to think critically, adapt to changing scenarios, and communicate effectively. The competition has imbued me with a deeper understanding of the multifaceted role of a CEO and the vital skills required to lead an organization to success. I am confident that the lessons learned will serve as a strong foundation

for my future endeavors in the business world.

4.It's always difficult managing time between academics, personal life, and other opportunities. How did you manage your time?

One of my strengths is to finish my job in hand first then take a break . Basically I used to complete my assignments immediately when they were assigned which provided me a window of time wherein I used to compete in various competitions.

5.What guidance or recommendations would you offer to fellow students to ace such high value platform?

I am no winner but my 2 cents for performing well in competitions would be never shy away from taking part in competitions if you can't find teammates go solo but take part because after post graduation you find any more opportunities to compete at a high like this in competitions . Basic knowledge of the topics taught in classes helps in clearing quizzes and getting a grip of the case studies which follow after clearing the quiz round. Also take help from the faculties whenever needed they would be happy to guide . Do read and try solve various case studies available online to get yourself familiarised with the ways in which businesses function.

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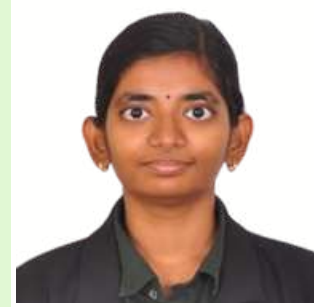Content Curator

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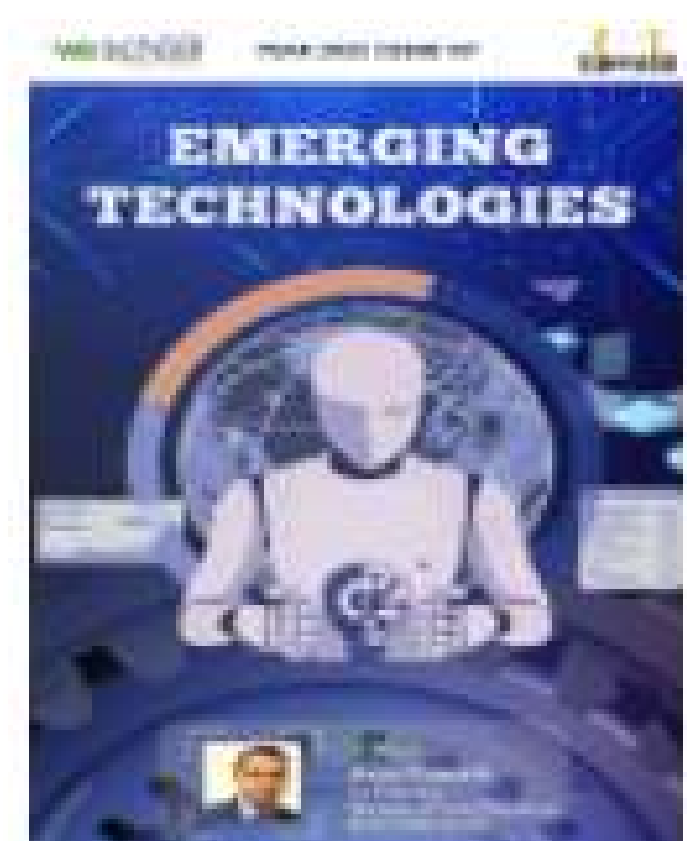
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