

Supply Chain Management of Mazda Motor Corporation

CSUN Analytics: Fueling Auto Supply Chain Success

Yin (Jerry) Ding
Mayur Pandurang Ahire
Zakir Hossain
Nachiket Pravin Pusadkar
Girija Shasidhar Meher Teja Sunkara



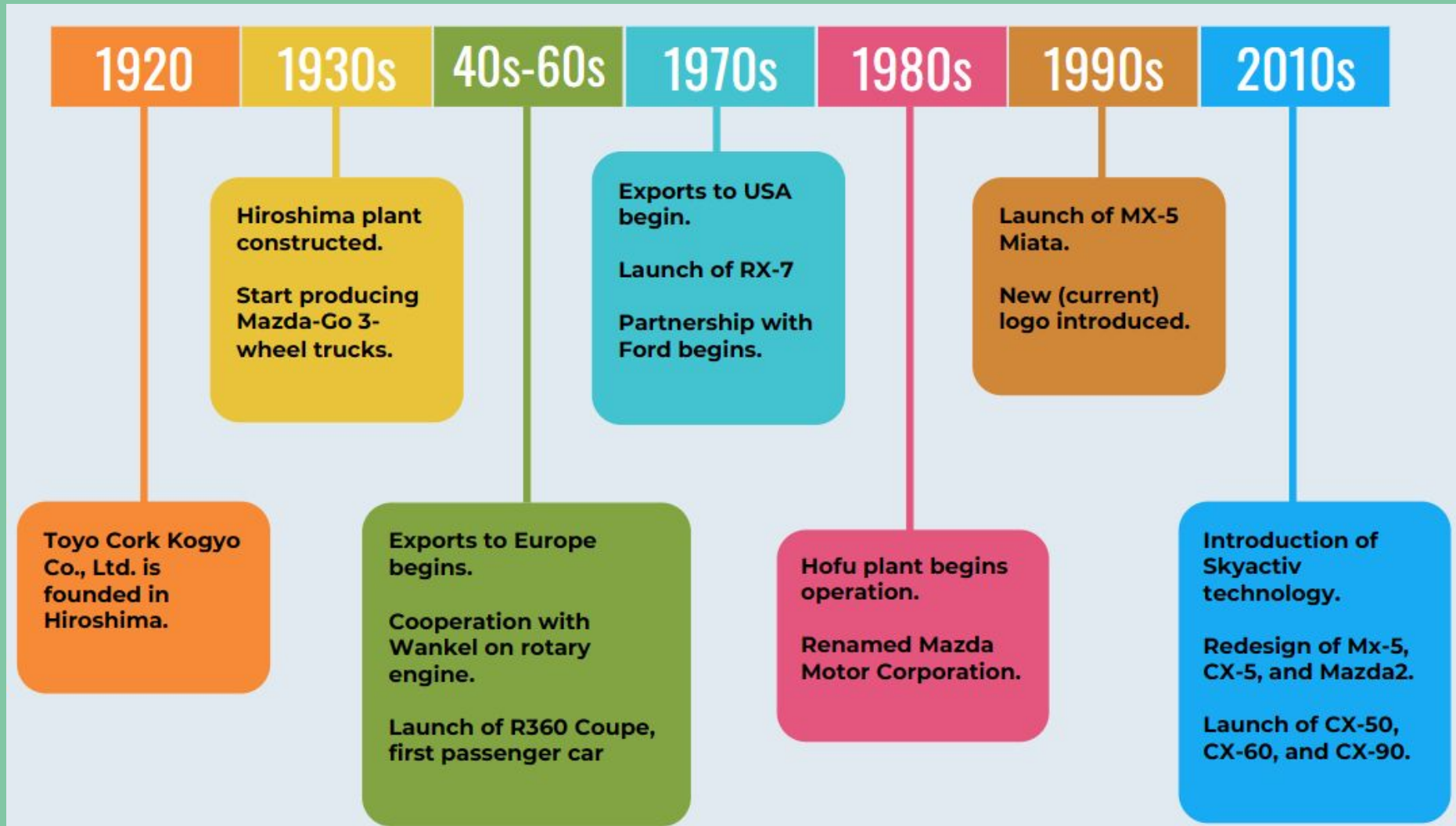


Table of Contents

- History
- Suppliers
- Production
- Distribution and Logistics
- Sales and Marketing
- Technology
- Sustainability

History of Mazda Motor Corporation

Timeline:



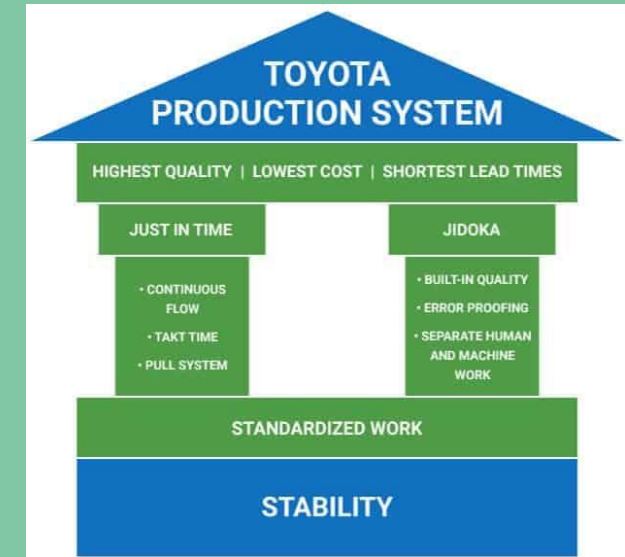
Introduction to Mazda's Production Plants

- Domestic
 - Hiroshima Plant
 - Hofu Plant
 - Miyoshi Plant
- International
 - Mazda Toyota Manufacturing USA in Huntsville, AL
 - Various other plants in Thailand, Vietnam, China, Mexico, etc.



Management of Mazda's Production

- Lean Manufacturing
 - Toyota's lean concept to increase production efficiency and cut costs by removing waste
 - Continuous process flow
 - Pull system
 - Leveling out the workload
- How Mazda's lean practices differ from Toyota
 - Focus on design as opposed to process (Jinba-Ittai 人馬一体)
 - Size difference
 - Slower production



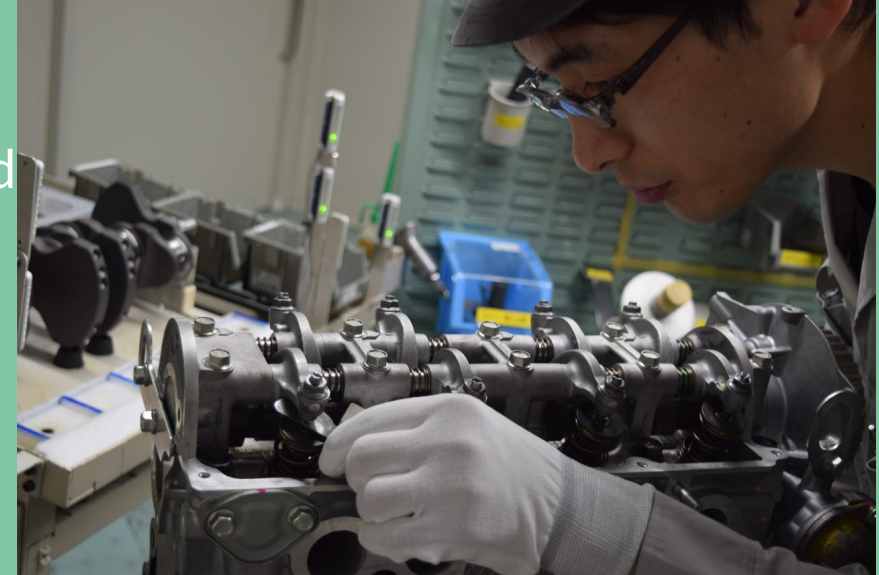
Management of Mazda's Production

- Agile and flexible manufacturing
 - Each plant is capable of producing different models on one line
 - Use of Automated Guided Vehicles (AGV)



Management of Mazda's Production

- Precision and Attention to Detail
 - Miyoshi Plant produces engines and parts for older models such as 1st gen. MX-5 Miata
 - Most parts are installed and torqued by hand
 - Cellular manufacturing where one worker assembles one engine from start to finish



Distribution and Logistics (History)

- Mazda opened an auto transport wharf at the mouth of Enko River in Hiroshima.
- Started highly efficient marine transport as early as in the 1960's.



Major Distributors

North America

- USA
- Canada
- Mexico

Europe

- Germany
- Austria
- Spain
- Italy
- France
- Switzerland
- UK
- DEmark
- Sweden
- Russia

Other countries

- China
- Thailand
- Australia
- New Zealand
- Taiwan
- Columbia
- South Africa

Database Management For Distribution

Mazda Motor Corporation has adopted:

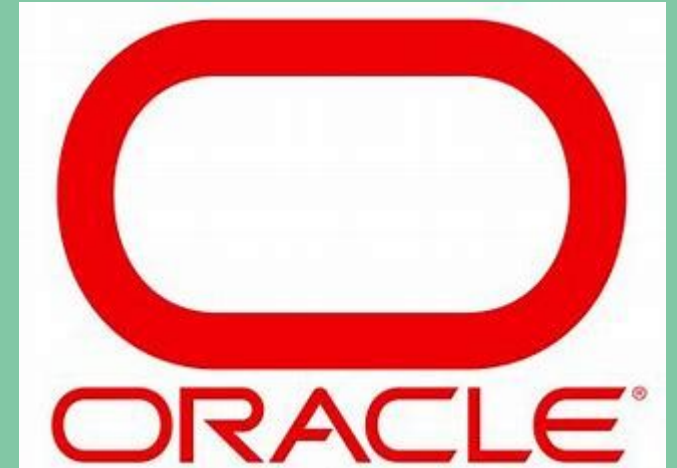
- Oracle Applications
- Oracle Fusion Middleware
- Oracle Database and Oracle Exadata Database Machine to support its global business by establishment.

Why?

To provide visibility into the movement of parts

The data needed to identify the optimal logistics solution for transporting goods across the Mazda network.

Oracle's global support and flexible solutions, a software solution design that works across Mazda's entire global organization.



Current Initiatives By MNAO (Mazda North American Operations)

- To get closer to our major markets to improve our order-to-delivery time for our dealers/customers and reduce transportation costs,"
- Mazda has shed more light on the development of its parts distribution network in North America, to improve delivery times and reduce transport costs
- (MNAO) latest facility, which opened this month, is in Vancouver, and follows on from the opening of the Chicago Parts Distribution Center last October.
- The Chicago facility will also supply automotive parts to Canada as well as the Midwest, serving 125 dealers.
- Black Horse carrier for those deliveries.



Mode of Transportation

The company's long history of marine transport and exceptional transport technologies are kept alive.

In choosing transport routes out of Mexico, MNAO and Mazda Mexico considered the entire field of options to the US and Canada.

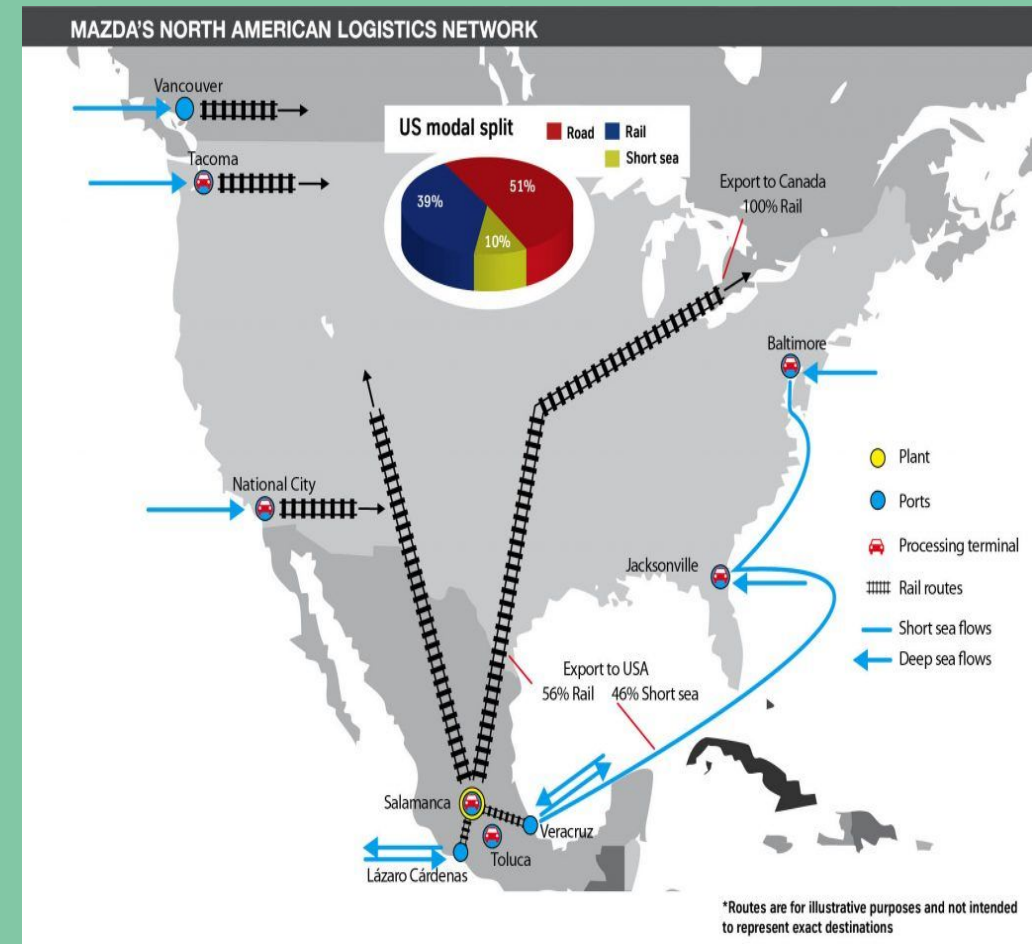
Mazda is moving

- 39% to the US by rail
- 51% to the US by road
- 10% to the US by short sea

This logistics strategy has parallels to the routes used by other carmakers exporting from Mexico.

Nissan, multiple plants in Aguascalientes, 200km north of Salamanca, By rail 30 % Mazda

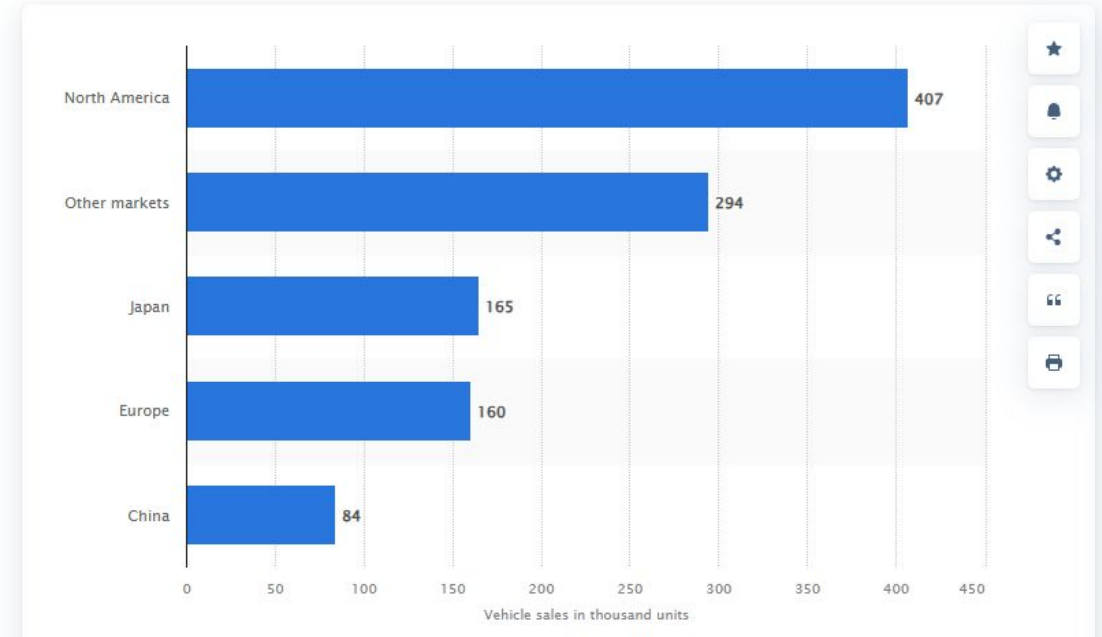
Honda, whose plant in Celaya is just 50km away from Mazda's, splitting its transport in roughly even thirds between rail to the Midwest, and short-sea services



Mazda's Sales and Market Report

Strong sales have been recorded by Mazda, with a noticeable rise in units sold in important areas, demonstrating the brand's attractiveness on a worldwide scale. The best-selling models including [name particular models] have made a substantial contribution to this achievement. Mazda is demonstrating its dedication to innovation and customer satisfaction by making significant progress in the automotive sector, bolstered by a robust market share and strategic expansion plans.

Mazda's global vehicle sales in FY 2023, by region
(in 1,000 units)





Mazda's Sales Performance

GLOBAL SALES OVERVIEW

- In recent years, Mazda's global sales have seen fluctuations. As with many automakers, sales took a dip in 2020 due to the global COVID-19 pandemic. Recovery was observed in some regions in 2021.
- Popular models globally included the Mazda CX-5, Mazda3, and Mazda CX-30.



Mazda's Sales Performance

REGIONAL SALES OVERVIEW

- North America: The U.S. has traditionally been a strong market for Mazda. The Mazda CX-5 has been particularly popular, accounting for a large portion of the company's sales in the region.
- Europe: Sales in Europe showed a mixed performance with some markets like Germany experiencing growth, while others faced challenges.
- Asia: The ASEAN market was crucial for Mazda, with Thailand being one of its production hubs. China, being a vast market, has potential, but Mazda faced strong competition from other international and local brands.
- Oceania: Australia was a consistent market for Mazda, with the brand being among the top sellers in the country.
- .



Challenges and Opportunities

- Mazda continued to emphasize its Kodo design language, which resonates with many consumers due to its distinct and elegant look.
- The brand pushed forward with its SkyActiv technology, aiming to optimize fuel efficiency and performance.
- In 2022, Mazda was increasingly focusing on electric and hybrid models. The Mazda MX-30 was the company's first all-electric vehicle, marking their entry into the EV market

Innovation and Future Outlooks

- With the global automotive industry transitioning towards EVs, Mazda's future strategies were expected to revolve around electrification, with plans for new EV models and hybrid versions of existing models.
- Continued focus on design and driving dynamics would likely remain central to Mazda's brand identity.

Mazda3

One of the most underrated current models. Mazda3 ensures a captivating drive paired with top-notch design.

CX-70

The 2024 Mazda CX-70 is stirring anticipation. The CX-70 is poised to seamlessly bridge the space between the CX-50 and the CX-90.

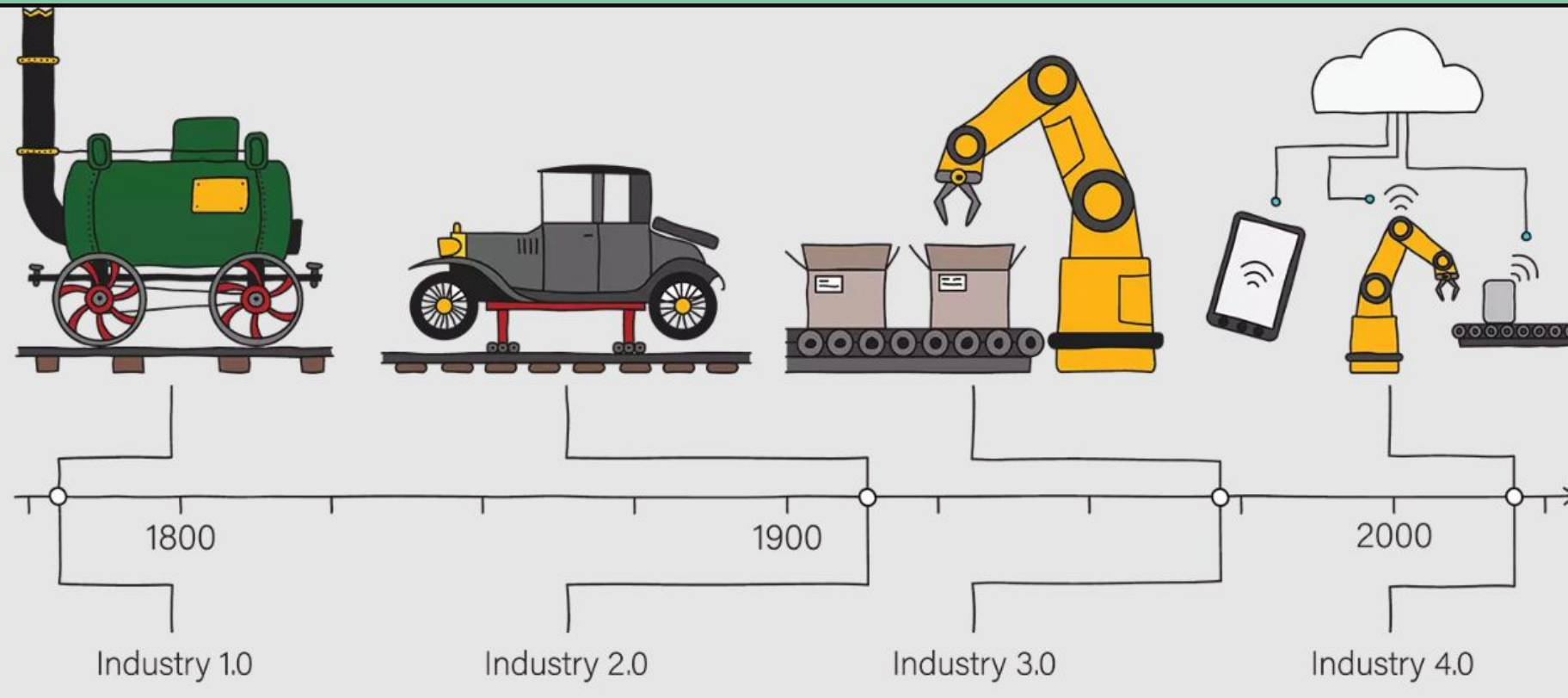
MX-5 Miata

The Miata has earned accolades throughout its evolutionary journey for maintaining an almost poetic 50-50 front/rear weight distribution



mazda sale strategy

Evolution of Supply Chain



Mechanization

Mass Production, Assembly line

Automation, Electronics, Robot Arm

Smart Factory, Big Data, Artificial Intel

Macro Process in SCM

With Oracle Cloud Infrastructure (OCI)

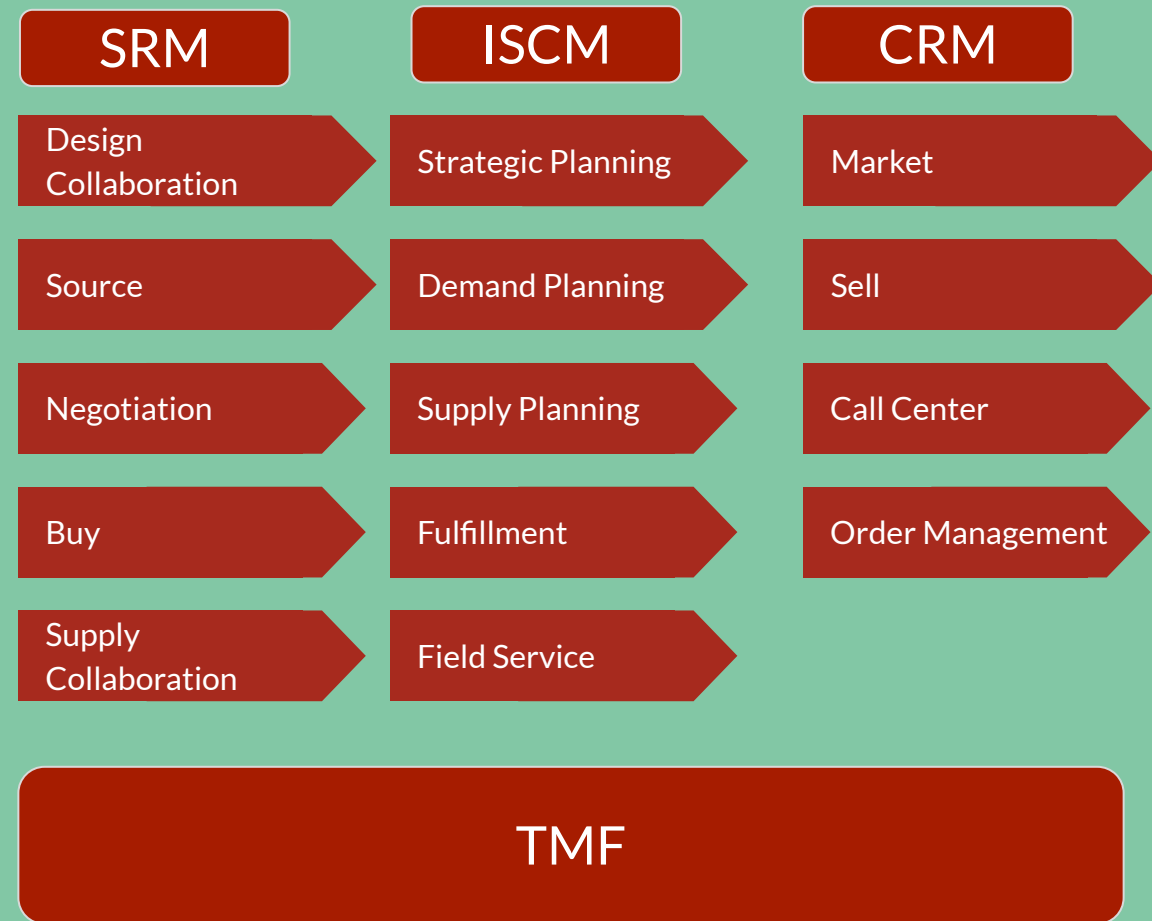
- OCI for manufacturing data analytics
- Oracle smart manufacturing
- OCI high performance computing
- Run most important applications in the cloud
- transaction processing, data warehousing, Oracle Exadata

What was achieved

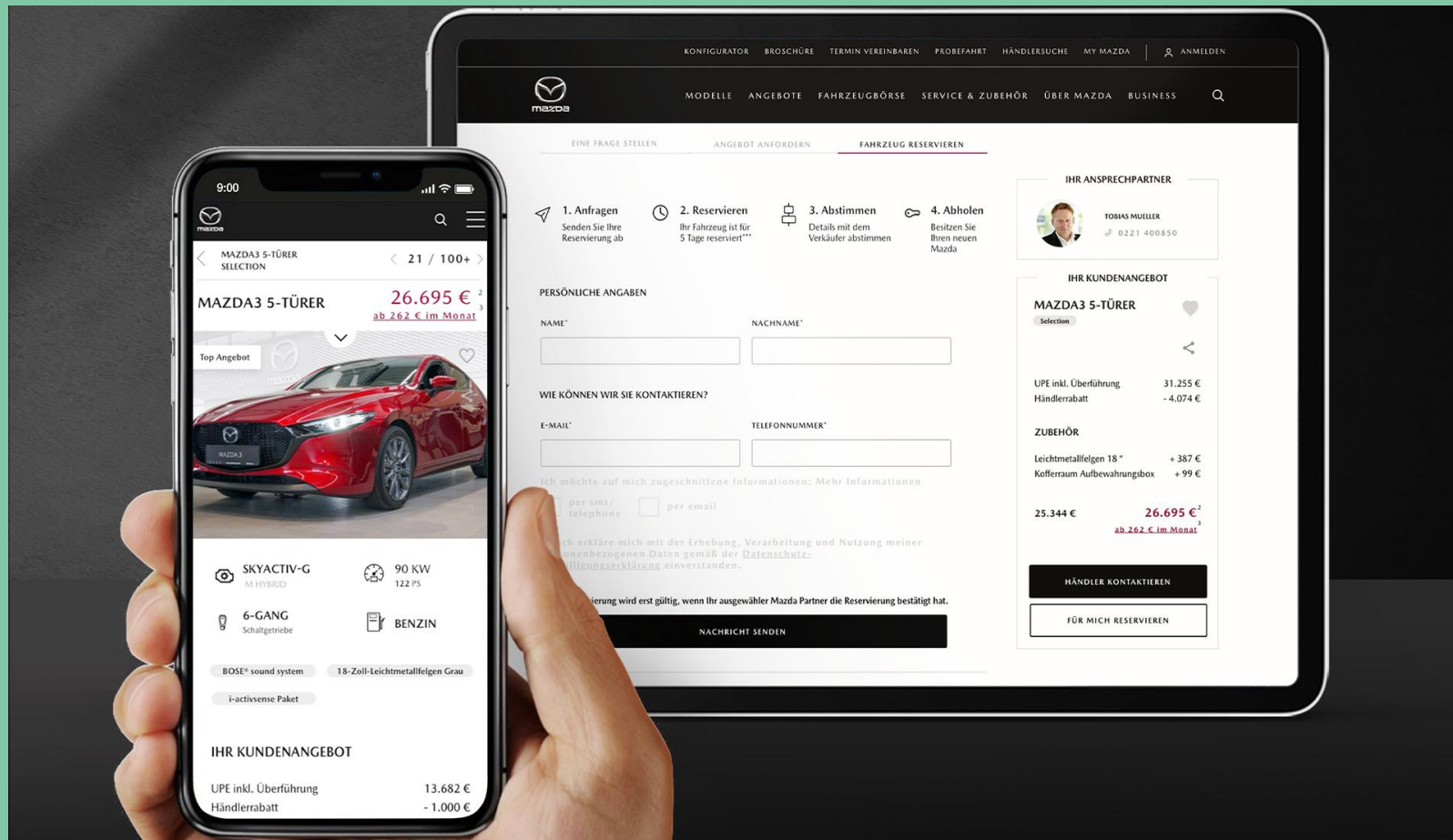
- Mazda cut costs by 50%
- boosted performance by 70%
- Mazda can run daily forecasts
- understanding their supply chain constraints

Oracle's Eloqua Marketing Automation

- optimize their marketing strategy
- 90% increase in email open rates






FindMyMazda: Mazda's way



- Launch its own online vehicle exchange with more than 28,000 vehicles
- Revised layout increases the user-friendliness
- Facilitation of content maintenance for Mazda dealers
- New vehicles, registered vehicles, and used vehicles last year
- Shows users the Mazda dealers' vehicle order history

What happen when you visit Mazda-

DISCOVER THE POSSIBILITIES
Select a model to build your ultimate Mazda. Then find a match at a local dealer.

CROSSOVERS & SUVs	SEDAN & HATCHBACK	SPORTS CARS
<p>2024 MAZDA CX-90</p>  <p>Starting at \$39,595 ²</p> <p>BUILD YOURS</p>	<p>2024 MAZDA3 SEDAN</p>  <p>Starting at \$24,170 ³</p> <p>BUILD YOURS</p>	<p>2023 MAZDA MX-5 MIATA</p>  <p>Starting at \$28,050 ³</p> <p>BUILD YOURS</p>

Predictive analytics

Demand Sensing

Causal Forecasting

Clustering and Segmentation

New Product Forecasting

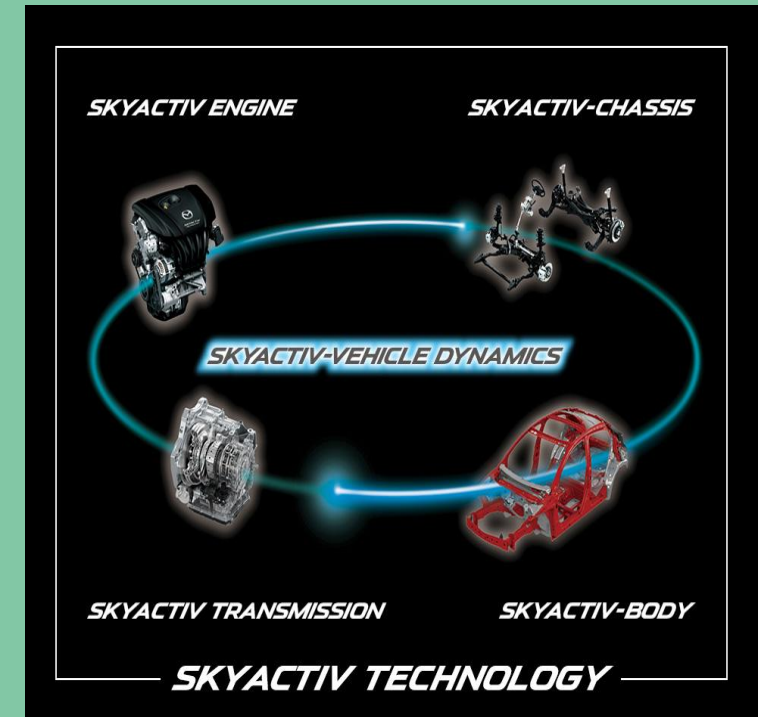
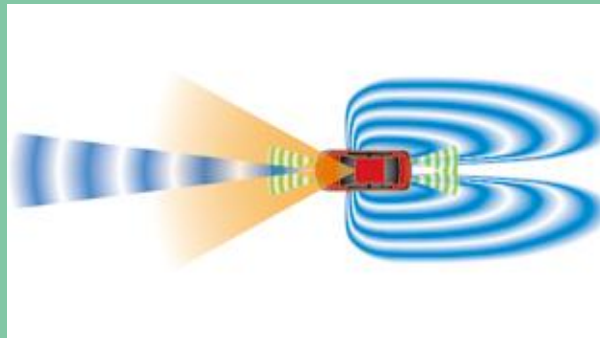
Real time feedback

Monthly to daily demand forecasting

Future Trends in Supply Chain

Digitalization Priority Shifting

- SKYACTIV-X: next-generation gasoline engine
- Develop G-Vectoring Control Technology
- Mazda Radar Cruise Control
- Emergency Lane Keeping
- Hill Launch Assist
- Forward Sensing Camera
- Driver Monitoring Camera
- In-vehicle display: calling, map and Music
- Smartphone Integration



Cloud, Application of IoT
Advanced robotics
Big data and advanced analytics
Improve customer satisfaction

Mckinsey & Accenture

Sustainability at Mazda

- Earth
 - Three pillars to achieve carbon neutrality in its global plants by 2035

Energy
Conservation

Shift to Renewable
Energies

Introduction of Carbon Neutral
Fuels for In-house Transportation

- People
 - Enrichment of emotional lives (smiles per gallon)
 - Improving employee satisfaction
 - Respect for human rights
- Society
 - Safety improvement and accidents reduction

