



G E N E R A L M O T O R S C O M P A N Y

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Overview

- ¶ Automotive industry: laggards or innovators?
- ¶ The industry faces many challenges and uncertainty, creating partnering opportunities
- ¶ GM is involved in a wide spectrum of collaborations with the DOE playing a key role in many
- ¶ GM has learned much about how to succeed with partnering and collaborations

THE AUTOMOTIVE INDUSTRY – A LONG HISTORY OF INNOVATION



Since the early 1970s:

- ¶ Reduced emissions by 99%
- ¶ Improved fuel economy by 130% for cars and 80% for trucks
- ¶ Crash fatality rate reduced by 66% in U.S., 75% in Europe
- ¶ Improved affordability by 40% (comparing price of new vehicle relative to prices of all consumer goods)



Chevy Equinox Fuel Cell



OUR INDUSTRY TODAY FACES REMARKABLE CHALLENGES...

¶ Customers

Connectivity, Safety, Design, Emerging Markets,
High Price & Operating Costs, Value

¶ Suppliers

Consolidation, Bankruptcies, Disruptions, Technology

¶ Substitutes

Mobility-On-Demand, Mass Transit, Used Vehicles

¶ Structure

Capital Intensity, Regulations, Cyclicity, Long Lead Times, Infrastructure,
Technological Complexity & Cost

¶ Competition

New Entrants, Low Margins, Global Competition



...WITH DISRUPTIVE IMPLICATIONS FOR THE FUTURE...

Conventional

Disruption

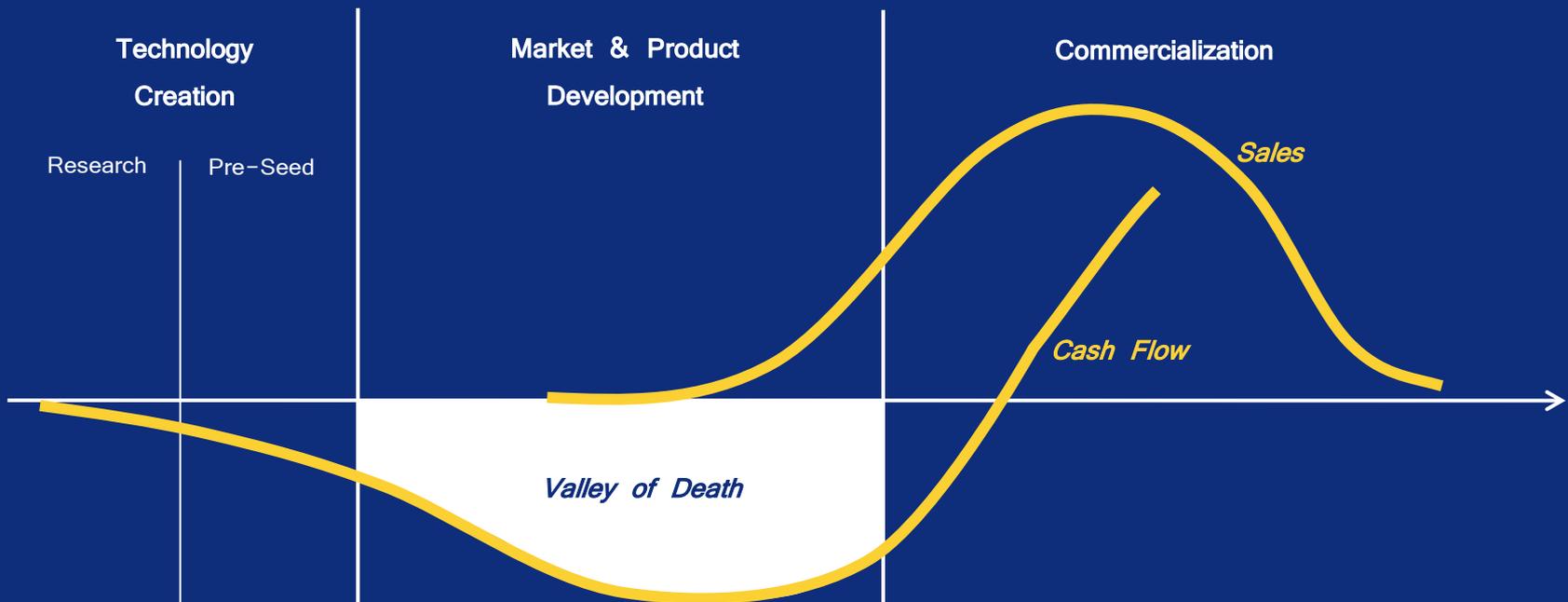
Petroleum fuel	Energy diversity
Internal combustion engines	Electric motors
Independent mechanical components	Integrated electronic systems
Human control, stand-alone	Autonomous, smart and connected
Stamped steel	Bio-based and advanced materials
Mass production	Mass customization
Expensive	Cheap
Developed markets	Emerging markets
High barriers to entry	New entrants
Banker's capital	Sovereign and private equity

...AND SIGNIFICANT OPPORTUNITY FOR PARTNERSHIP AND ALLIANCES



Partnership & alliance opportunities along the technology commercialization pipeline

Technology Commercialization Business Cycle



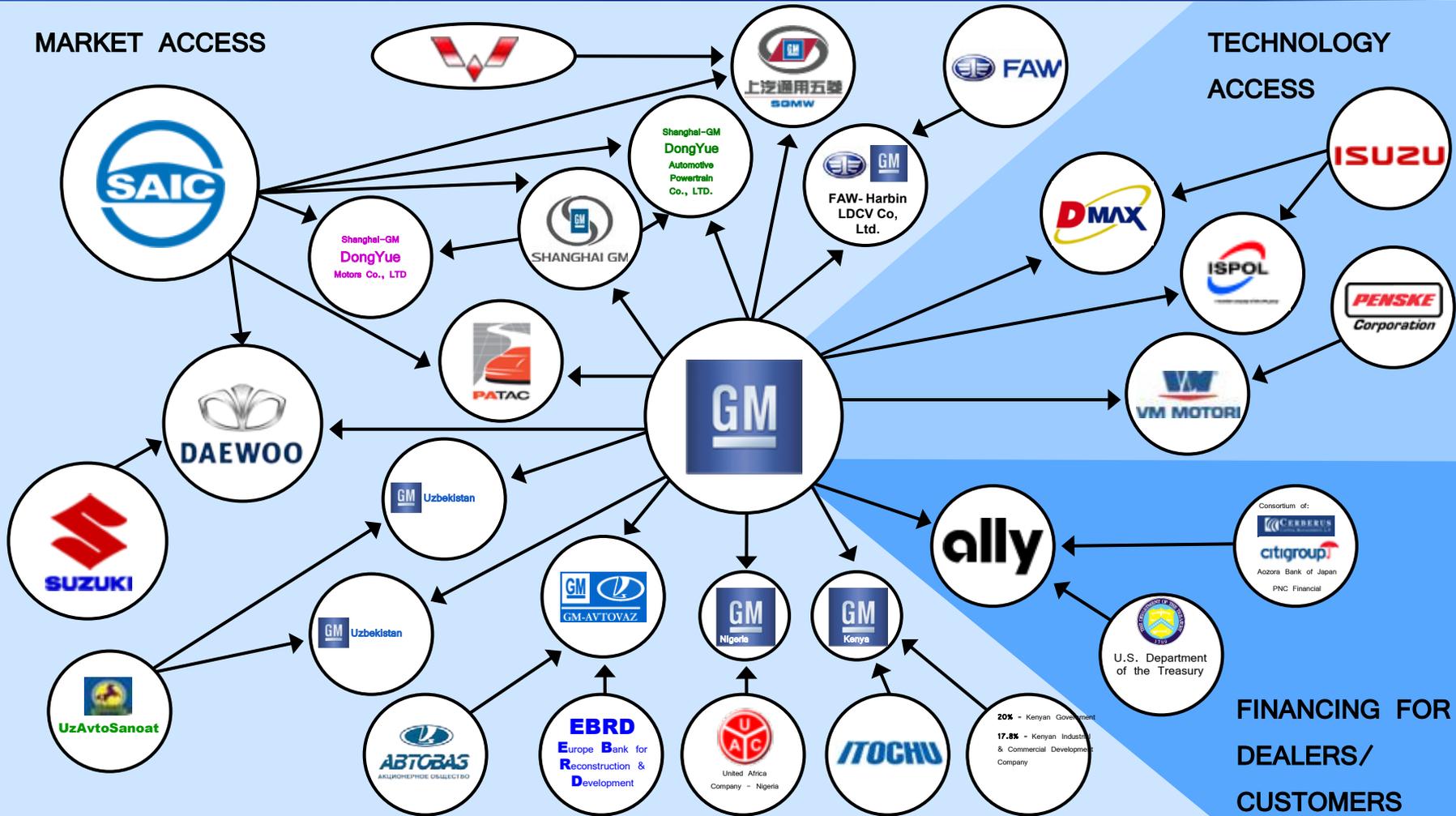
Public Sector

Private Sector

GM IS INVOLVED IN MANY JVs AND EQUITY ALLIANCES...

MARKET ACCESS

TECHNOLOGY ACCESS



FINANCING FOR DEALERS/ CUSTOMERS

GSPA & NBD IS FOCUSED ON PARTNERING & LICENSING

¶ Develop and Manage GM IP Strategy and Process

- Ensure the IP strategy supports the Technology strategy to support the Business strategy
- Identify critical technologies for competitive advantage to develop or in-license

¶ Partnering and Licensing for Product Technologies

- Identify, develop, and negotiate product & IP related deals
- Support incoming & proactively identify new opportunities
 - 3 legs of the stool for proactive intellectual property strategy (commercial potential, ownership, need)

¶ Management of Alliance (JV & Partner) Relationships

- Ensure Alliance relationship is healthy & delivers according to goals
- Restructure relationships/agreements to evolve with changing business and technical strategies of the parties

GM LESSONS LEARNED

- ¶ Important to have clarity and understanding of partnership from outset – the reasons for it, synergies, and strategy
- ¶ Parties must be aligned – extent of commitment, resources to be dedicated, goals/objectives, deliverables, and time expectation
- ¶ Agreement on expectations and scope
- ¶ Communication is critical
- ¶ Mutual respect with common objectives for win-win
- ¶ Relationships must be flexible with compromise – not just “the company” way
- ¶ Alliance strategy integrated with overall business strategy
- ¶ Partner selection – fit

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