



New Economic Environment's Impact on the Automotive Industry

3/15/2009

The economic events unfolding are unique in nature and are establishing the foundation for a new environment through the global economy

Fluctuations in Commodity Prices

- Volatility in raw material costs
- Oil price volatility impacts supply chain costs and increase consumer fear

Economic Slowdown

- Largest reductions in demand and production on record
- Developed markets hardest hit
- Slowdown has spread to emerging markets

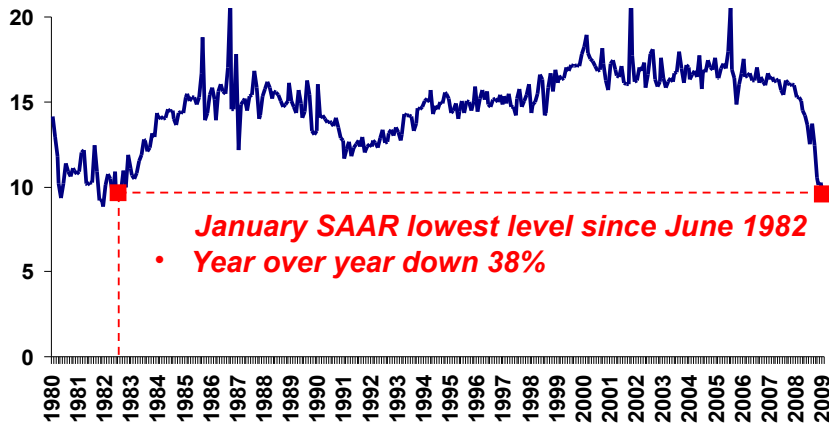
Global Credit Crunch

- Reduction in consumer credit to buy
- Limited access to capital to restructure
- Major auto companies exiting or significantly reducing vehicle leasing

Governmental Actions and New Regulations

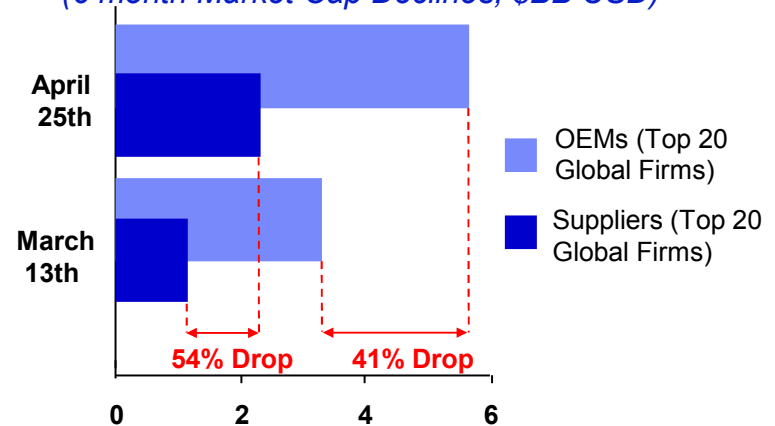
- Bailout loans to enable industry transition in U.S.
- Greater oversight and limitations on captive finance organizations
- New environmental requirements

North American Light Vehicle SAAR
(MM Units)



which has led to:

Auto Industry Value Destruction
(6 month Market Cap Declines, \$BB USD)



... over **\$378BB** in Market Capitalization lost

Source: Wards Automotive, Thomson Financials

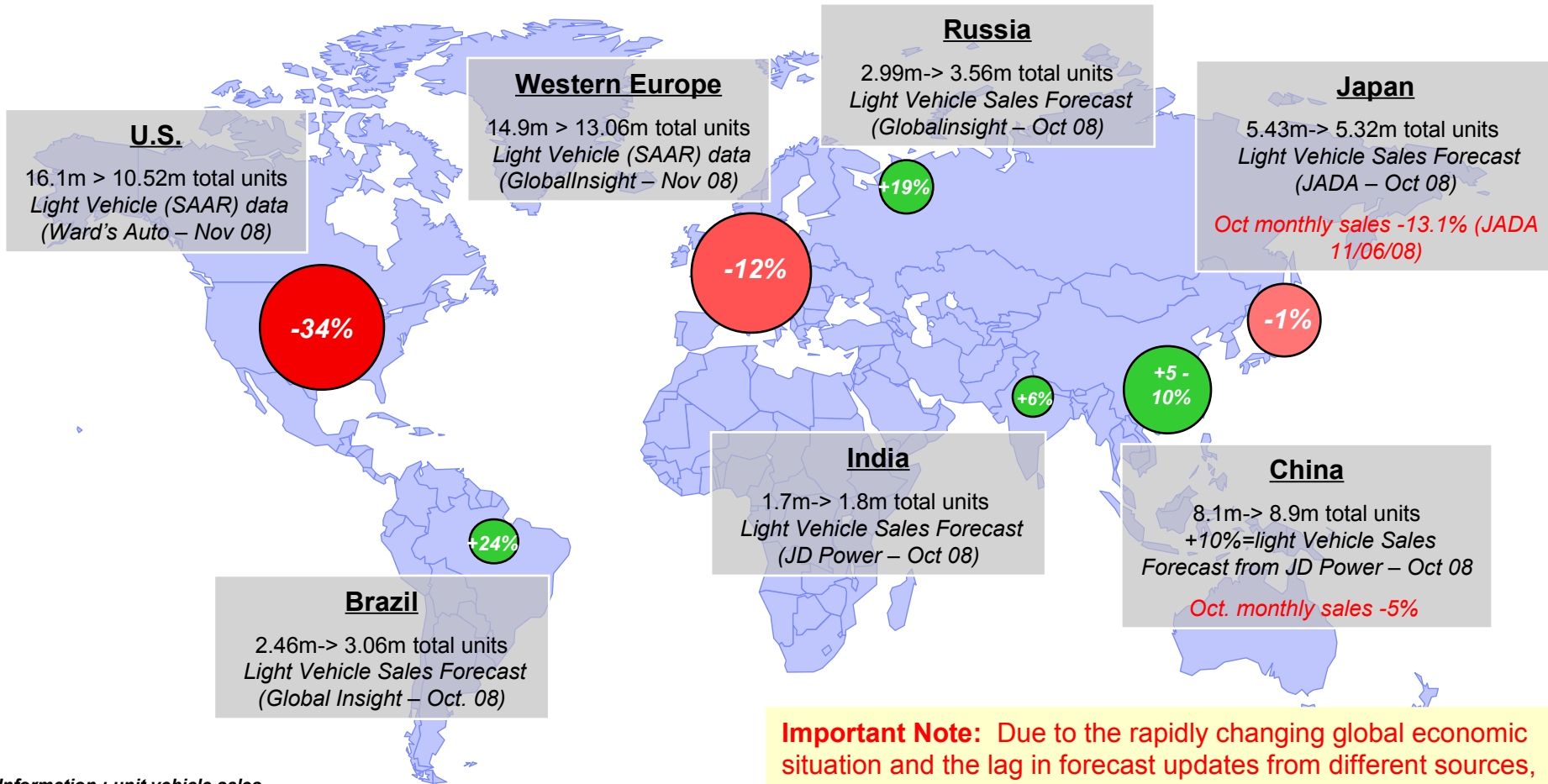
Note: Chrysler is among top 20 OEMs and Robert Bosch GMBH is among top 20 suppliers, they are private entities and could not be considered for calculations

NOTE: This chart is current as of November 1, 2008, please check for more recent version as events are changing rapidly



PLEASE REMOVE THIS BOX BEFORE USING

Operating trends varies by region creating different levels of exposure for the global automakers



Important Note: Due to the rapidly changing global economic situation and the lag in forecast updates from different sources, some full year growth estimates shown may be optimistic – especially those data dated more than 30 days old.

All Information : unit vehicle sales
 % change and "total units" by region is auto units sales '07->'08
 Circle area based on size of market (2007)
 Source: Source: Ward's Auto, JD Power, Global Insight, JADA, Automotive News

This will be a different kind of downturn where traditional responses will not suffice

Long and Difficult

- Unprecedented constraints on access to credit and capital; Unwinding of over-leverage
- Falling demand, increased price sensitivity as consumers and enterprises cut back
- Disruptions in supply chains, partner and customer arrangements

Transformative

- Restructuring of industries: Firms fail, sold off overnight
- New regulatory regimes
- Stress on global inter-dependencies

Typical cost management will NOT be enough

Firms must examine working capital & investment: identifying opportunities to restructure, reduce, and preserve capital as well as streamline operations

Yet broader forces are at work

Our world has become...

Smaller & Flatter

- Pervasive connections and communications
- Emerging markets
- Open trade

Riskier

- Systems-level complexity
- Viral spread of information
- Widening gap between information available, and information effectively managed.

Smarter

- Instrumented
- Interconnected
- Intelligent

... And tomorrow's leaders will capitalize on the new opportunities created

The operations of automotive enterprise's are at a crossroads where the need to re-set industry direction beyond the current downturn is at hand

Functional View



Enterprise

Implications to auto companies will be a strong jolt...

- ***Evaluate viability and partnerships***
- ***Cash and liquidity is king***

... but also, an opportunity to change the industry for far-sighted companies

- ***Respond decisively to the downturn***
- ***Keep innovation on the agenda***



Development

- ***Innovations to be rationalized or delayed***

- ***Greener, safer and connected vehicles***
- ***Collaboration between competitors***



Manufacturing

- ***Plants will need to close***
- ***Changing manufacturing mix***

- ***Flexibility and scalability***



Distribution

- ***Severe overstock on dealer lots with a undesirable product mix***

- ***Responsive and effective demand management***



Service

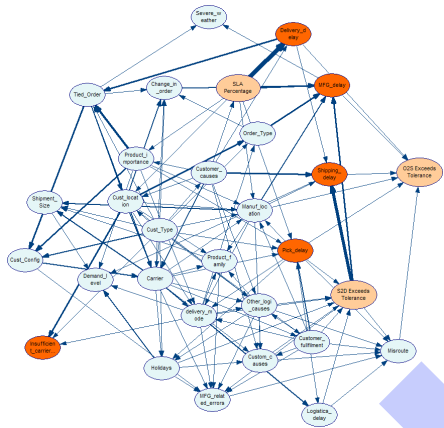
- ***Vehicles on the road longer***
- ***Counterfeit / gray market parts***

- ***Increased service revenue***
- ***Demand growth***



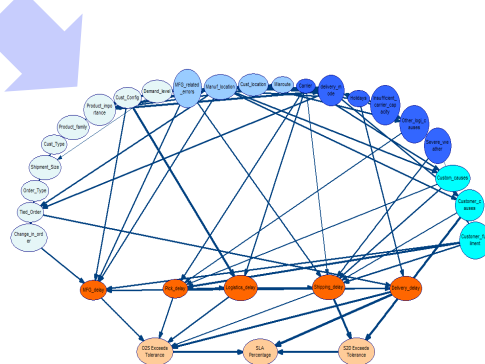
Automotive enterprises will need to understand their global risks not only in their direct operations but the impact from competitor's difficulties

Global Risk Management



- The outcomes from risk pervade the enterprise and also extend to the entire value chain
- The failure of competitors affect their suppliers, which are also yours'
- Volatility is driving risk in the current environment

- Risk assessment, mitigation, monitoring and control will be critical to adjusting enterprise strategy
- Risk may be used as an opportunity to drive out competitors



- Rapid need to re-evaluate viability of operations and partners as well as their exposure to other weaker OEMs
- Cash will be a key to providing companies the ability to transform operations and drive a new direction
- Understand fixed to variable cost structure and determine what strategic changes may be required

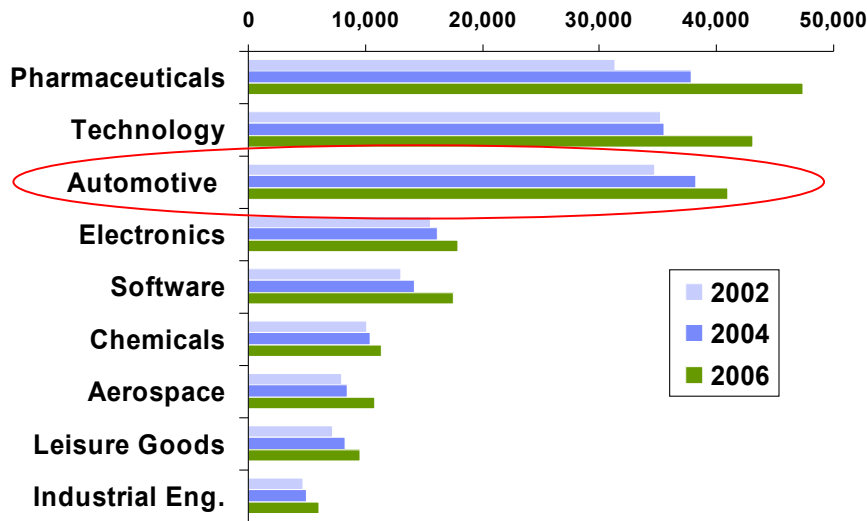
- Beyond the viability of operations, the enterprise should determine how to **transform its business and enhance its capabilities** in the changing world and boldly set out to do so
- Manage on global risk to **minimize exposure** to outcomes of partner's and competitor's weaknesses
- Determine how the enterprise will **continue to invest** in innovation for the future

...Automotive enterprises will be challenged at every level to survive and to keep innovation moving forward while controlling risk



Automakers must embrace industry-wide partnering in order to realize innovations that will move the industry forward

Growth in R&D Expenditure by Sector Across Global 1250



- Vehicle innovations may be rationalized for faster development of small, economical vehicles
- The increasing cost of innovation is unsustainable for companies to absorb by themselves
- Innovations beyond one development cycle could be delayed

- Development on **greener, safer and connected vehicles** will need to continue aggressively
- New power train development will **require collaboration** between competing OEMs for broader industry application
- Need to quickly develop applications for **innovation from outside** the industry

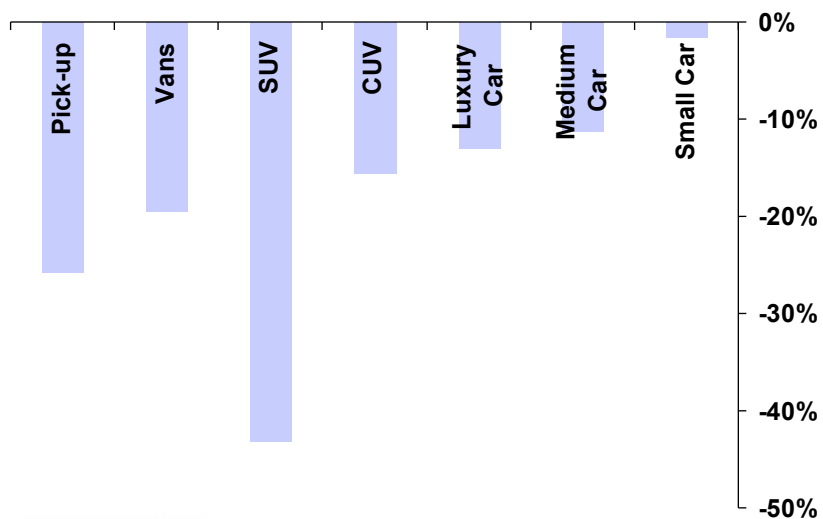
...industry-wide consortium partnering and other creative financing must become the norm for developing next generation capabilities

Source: 2007 R&D Scorecard, BERR, 2007. G1250 refers to the 1,250 most active global companies, 2008



Dramatic changes in demand and product mix are forcing a hard re-evaluation of vehicle offerings and production capabilities

Change in North American Vehicle Sales (Q3 2008 v Q3 2007)



- Only a single sub-segment increased sales, though most small vehicle groups are still selling
 - Thirteen sub-segments dropped by over 25%, SUVs by over 40%
- Focus will be on converting manufacturing mix to smaller vehicles
- Plants that are too costly to convert will need to close

- The capability to develop **flexibility and scalability** in operations will drive future success with varying vehicle mixes
- Capability to quickly launch, operate and support production facilities in new and remote locations

...enabling flexible production capability to adjust to changing demand mix will be a key for automaker's investments

Source: Wards Auto, North American sales were selected as the economic situation and changing vehicle mix are most represented in that market



Demand, distribution and cost pressures require leaner and more flexible supply chains for new vehicles and components



- Premium brands have placed greater focus on build to order
- Offering significant vehicle combinations and permutations



- Basic make to stock vehicles
- Significant local /dealer customizations available at point of sale and beyond



- Basic make to stock vehicles
- Less models and combinations, focus is on quality and value

- Severe overstock on dealer lots must be addressed both from a credit and economic slowdown perspective, greatly affecting product pricing
- Transportation costs will force more supplier parks in close proximity to final assembly
- Lower cost brands with fewer options will demand greater content and lower prices from suppliers

- **Online configurators** by several premium brands enable OEMs to understand vehicle features that are most compelling to consumers
- Finished goods **forecasting capabilities** will be key to ensuring optimal lot inventory
- OEMs will have to **re-tool distribution** strategy for vehicle segments to avoid repeat of current issues

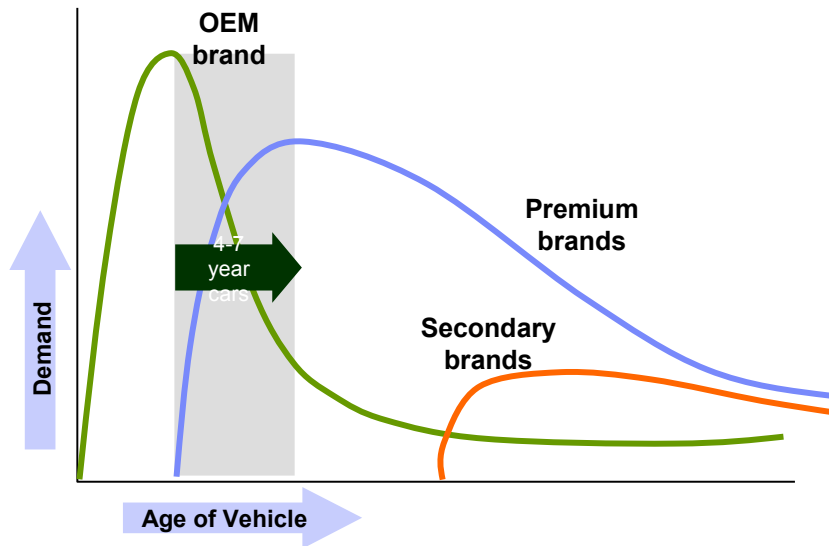
...Distribution strategy affects manufacturing strategy and will need to be re-evaluated to avoid future overstocking of finished goods inventory



Service

There will be significant growth in the service segment and OEMs need to get their share of this market

Consumer's Spare Parts Usage



- Vehicles will require greater service as they stay on the road longer looking for least expensive service
- Demand growth may also bring a significant increase in counterfeit and gray market parts
- Dealers are significantly outnumbered by their competitors, many of whom operate with very lean cost structures

- Automakers will do more to **increase service revenue** as it is the key to profitability
- Supply chain management solutions will be needed to deal with the **demand growth** that will come from older vehicles

...Automakers must drive greater collaboration and supply chain transformation with their dealership network to win in this growth segment

These events will accelerate structural changes in the industry that have been already developing

The Value Chain will require near-term re-examination...

... however, longer-term outcomes are favorable to the health of the industry

Value Chain View



Suppliers

- **Disruptions**
- **Consolidation**

- **Strong suppliers get stronger**
- **Greater balance with OEMs**



OEMs

- **Re-evaluation of business**
- **Rationalization of brands and products**

- **Industry-wide partnering**
- **Closer to consumer**



Finance

- **Near-term difficulties**
- **New governmental regulations**

- **Long-term profit driver**
- **Cost savings opportunities**



Dealerships

- **Many dealerships will close**
- **Challenged at every direction**

- **Fundamental transformation**
- **Closer to consumer**



Aftermarket

- **Will remain significantly fragmented**

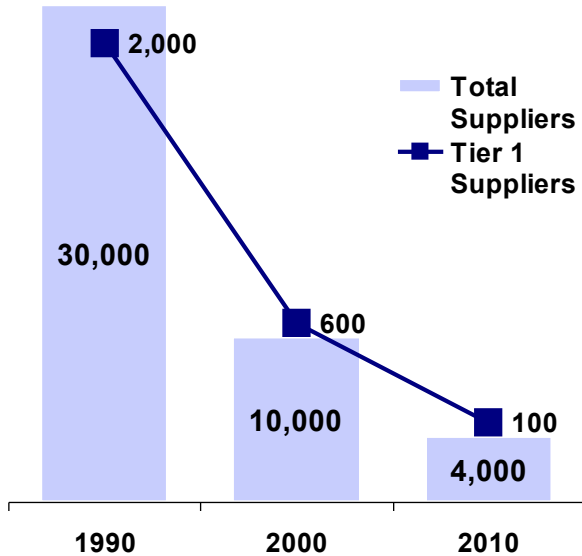
- **Growth opportunities**



Suppliers

Economic challenges will spur much faster consolidation, significantly strengthening the stronger suppliers

Number of Automotive Suppliers



Plastech Engineered Products

2007 : Sales of **\$1.7B USD**
Employees: 7,600, Facilities: 31



Johnson Controls

2008: Purchased Plastech assets for **\$169M USD**

- Potentially rapid failure of weaker suppliers may disrupt automotive supply chain and could interrupt product development
- Suppliers are highly affected by commodity price fluctuations
- Reliance on OEMs for too large a share of business continues to impact their options

- Strong suppliers will add significant integrated capabilities as they **acquire** weaker suppliers and **consolidate**
- Disparities between suppliers and OEMs may move toward a **greater balance**

...Suppliers must be ready to strengthen their capabilities through acquisition and rapidly integrate new assets

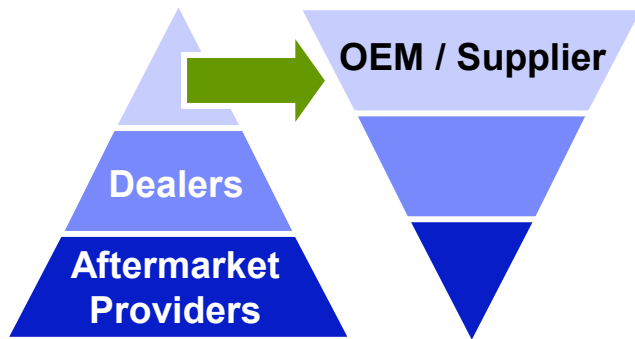
Source: Automotive News, Deutsche Bank, IRN, Detroit Free Press, <http://www.freep.com/article/20081023/BUSINESS01/81023048> , 2008.



OEMs

OEMs must continue to keep innovation on the agenda and use the economic environment to restructure the industry

Historically, OEMs possessed the least amount of primary data and information about consumers and how they used their vehicles



The opportunity is upon OEMs and suppliers to flip the information pyramid upside down:

Emerging capabilities:

- Online communities / blogs
- Online vehicle configurators

Economic event driven:

- Push to develop Online ordering for vehicles and Build-to-Order supply chain

Innovation driven:

- Embedded systems
- Connected vehicles

- Fundamental re-evaluation of business partnerships, viability and capability of operations
- Significant disparity between OEMs, with some at an overwhelming disadvantage
- Economic weakness may force delay or rationalization of vehicle innovations

- OEMs will need to be much more aggressive in broader **industry-wide partnering**
- OEMs will be able to position themselves much **closer to consumers** than ever before

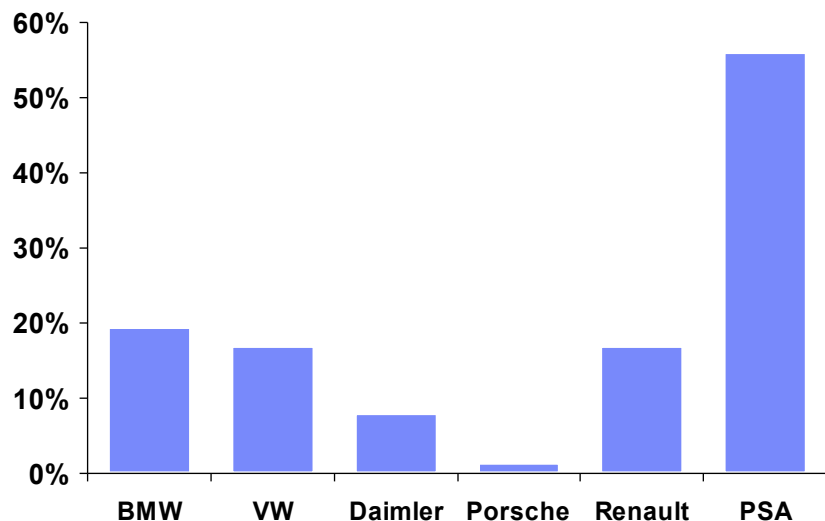
...OEMs can be in a position to have the most complete consumer, vehicle and usage information that they've ever had in the coming years and must continue to develop it



Financial Services

Financial Services units are a significant contributor to balance sheets and are being hit hard by the cyclical downturn

Financial Services Contribution to EBIT



- Significantly increased difficulty in consumer credit, especially in the U.S.
 - Nearly 18% of sales volume came from consumers with poor credit scores
- Credit conditions can vary greatly by market
- Some OEMs are re-evaluating credit operations for potential divestiture and have ceased leasing in some markets
- Finance organizations will be first hit with new banking regulations and oversight

- Financing will remain critical to the **long-term success** of large auto companies
- There are significant **cost savings opportunities** within the finance organizations of most OEMs

...Financial Services will continue be critical to the OEM business as it accelerates the ownership cycle, raises revenues per unit and enables influence over residual values



Dealerships

Dealerships are at the most difficult juncture and must work to embrace a transformation of the automotive retail model

Dealers are affected from every aspect of their business:



- Overwhelming struggles are expected for dealers as they are exposed to all four economic hurdles
- Dealers are carrying significant lot inventory that must be financed, these are now very difficult to sell
- Dealerships are at risk for being marginalized
- "...it is clear that dealers are now at a crossroads"
—Automotive 2020: Clarity Beyond the Chaos

- Economic difficulties may drive a **fundamental transformation** of the automotive retail landscape
- Restructuring the retail relationship will focus on getting **closer to consumers**

...Dealers and OEMs must work jointly to transform the retail model for the industry

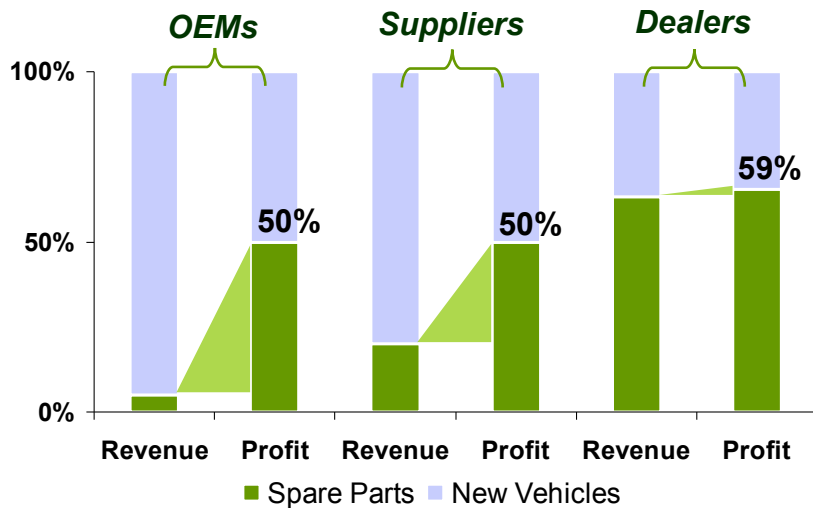
Sources: IBM Analysis, <http://online.barrons.com/article/SB122488828292068361.html>



Aftermarket

OEMs and suppliers have made their largest profits on aftermarket parts and should further focus energy on this area

Relative contribution of spare parts to overall profits



- Extended slowdown will push consumers to keep vehicles on the road longer and find the least expensive service solutions
- Aftermarket consolidation will be delayed and increasingly threaten dealer profits
- Working capital tied up with warranty claims between Dealers, OEMs, and Suppliers

- There will be strong **growth opportunities** for aftermarket providers and those that can achieve economies of scale through inexpensive, quality service
- Service parts have been one of the **most profitable** areas of the value chain
- New dealer networks in **emerging markets** require efficient and responsive aftermarket capabilities

... Forecasting, inventory visibility and dynamic pricing of parts will be key to winning

Source: North American Automotive Parts Development in e-Commerce – www.woods-seaton.com, 2005 Motor and Equipment Manufacturers Association, North America

While the new economic environment is decidedly difficult, auto companies will continue to press ahead

Focus on ***Growth and Innovation...***

- What markets will growth come from?
- How will innovation be funded?
- What will be the innovations that drive growth in more intelligent vehicles?

...while keeping attention on ***Cost and Efficiency***

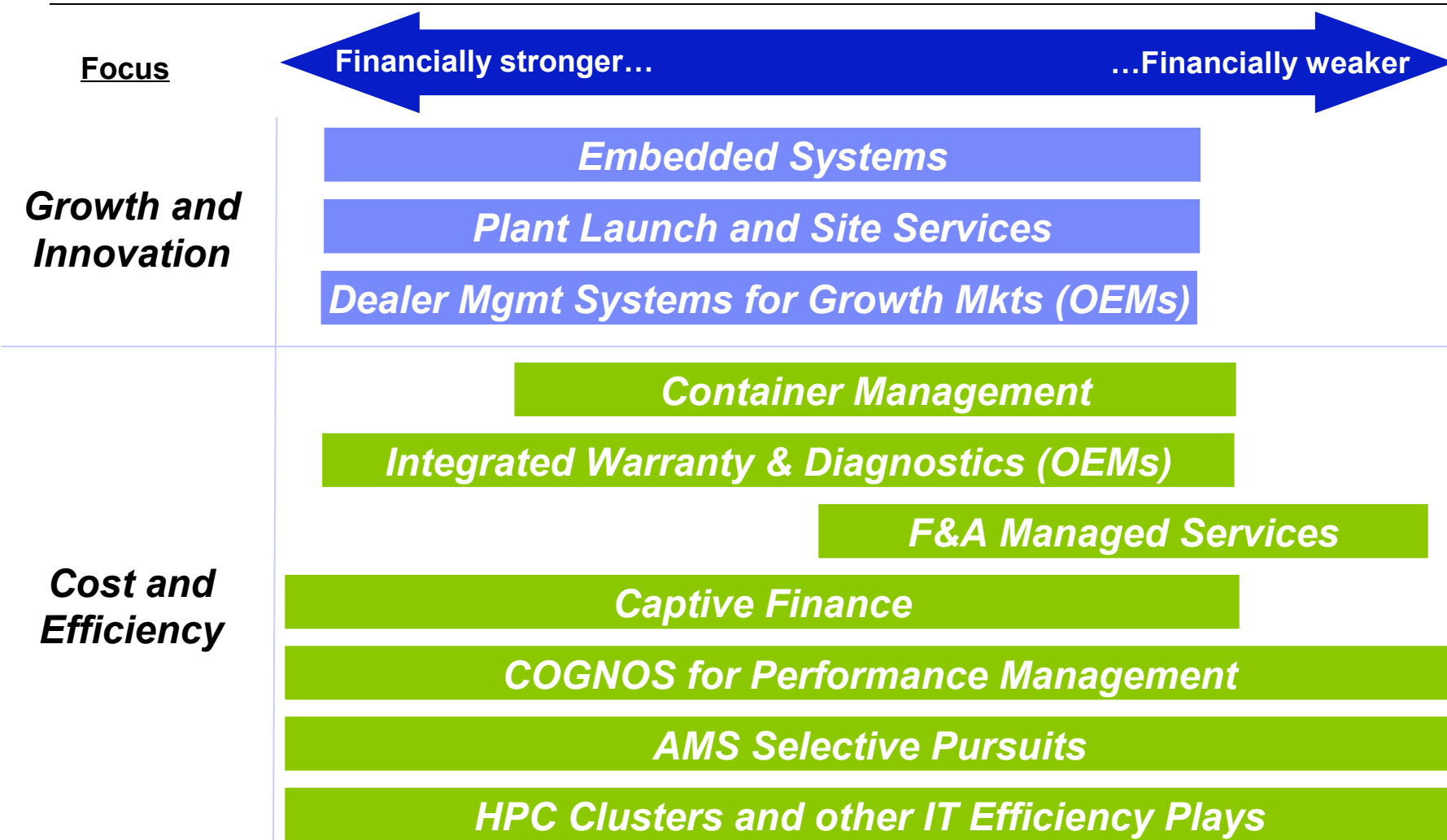
- How will production be retooled for a different product mix?
- Can new distribution strategies for new vehicles lower costs?
- Will new intelligence be able to minimize risk and drive greater efficiency?

While the new economic environment is decidedly difficult, auto companies will continue to press ahead

- Automakers must reduce cost today...
 - ...and operate more efficiently
 - ...in order to collect cash faster
 - How will production be retooled for a different product mix?
 - Can new distribution strategies for new vehicles lower costs?
 - Will new intelligence be able to minimize risk and drive greater efficiency?

- And at the same time...
 - ...invest in critical areas to drive future growth
 - What markets will growth come from?
 - How will innovation be funded?
 - What will be the innovations that drive growth in more intelligent vehicles?

How IBM can help...



Auto companies must drive change in a fundamentally more intelligent, dynamic and responsible way

“I do not have access to the right information in a fully transparent way”

New Intelligence

How can we take advantage of the wealth of information available from our new smarter things to make more intelligent choices?

“I want to be much more flexible, locally and globally, in how I run my business”

Dynamic Enterprise

How should business, government and other institutions adapt to the expectations of its new clients and the ever faster pace of change that it brings?

“I have to be a true part of society, in all that I do; environmentally, socially and economically”

Green & Beyond

How do we align our goals and behaviors with our new responsibilities, so that caring for our planet and its people is no longer perceived as generosity or sacrifice?

IBM Automotive



BACKUP



An additional wildcard into the analysis is the effect of the U.S. bailout package that will enable loans to auto companies

- Rules are being written the U.S. Department of Energy and are expected to be completed by November 30
- Automakers are being challenged by a provision in the program that says they must establish that they are "financially viable" without the loans (a requirement of the law) and by what type of collateral the government might seek for the loans
- Automakers are being consulted during the rule-writing process, but little specific information is available at this time for how this money would be released
- Separately, Captive Finance organizations may qualify under some of the banking provisions for help as well

Source: <http://www.detnews.com/apps/pbcs.dll/article?AID=/20081024/AUTO01/810240351/1148/AUTO01>



There are four primary risks tied to finance services for auto companies

Ability to get **refinancing** and the cost involved

- Increased refinancing cost endanger profitability
- CDS levels have risen substantially over the past few weeks
- Credit availability plays a major role at all levels of the value chain

Quality of the client base and **loan losses**

- Customers are walking away / defaulting on their loan agreement
- Car loans are exposed to a rather low level of loan-losses, unlike other parts of consumer financing such as credit cards, etc

Available **liquidity**

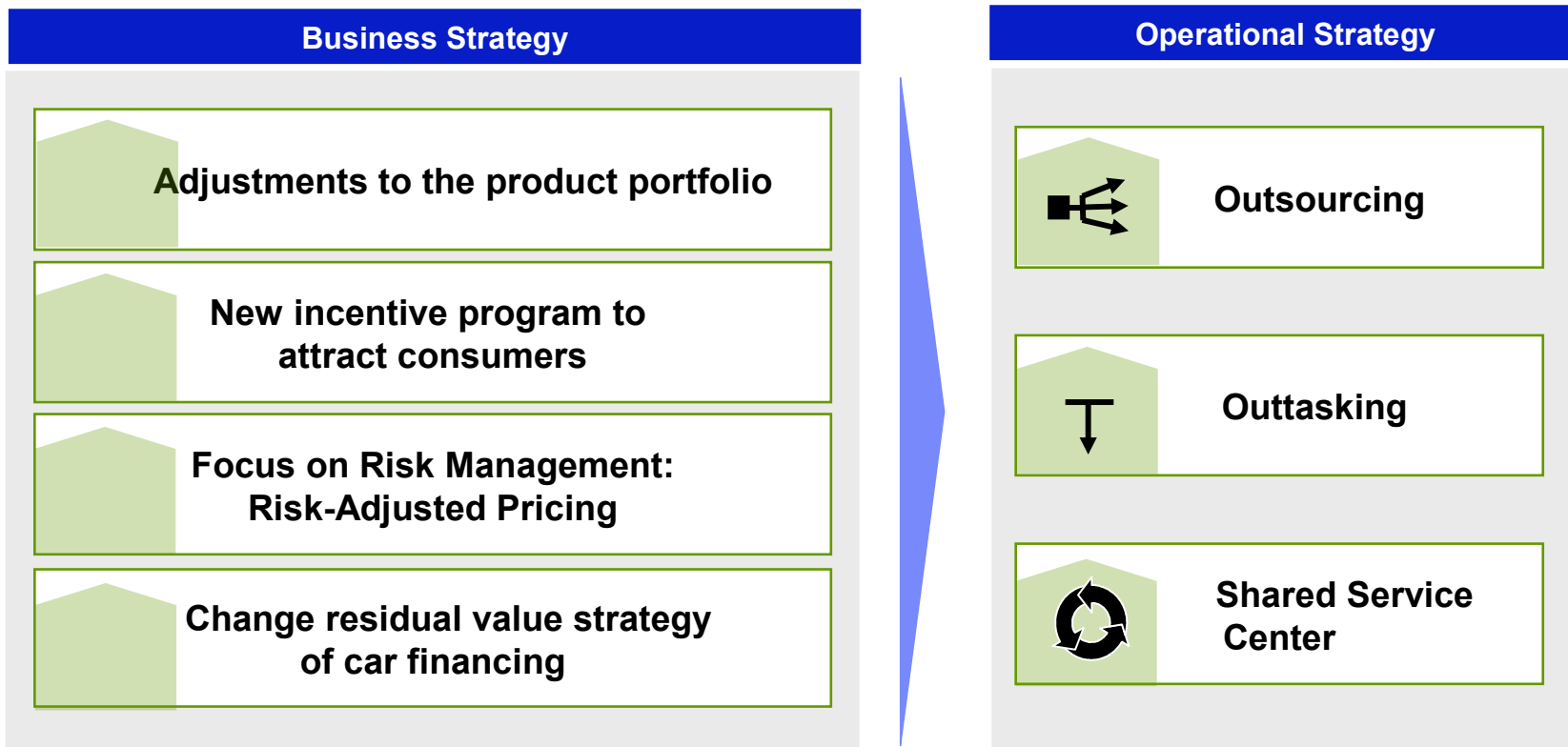
- Most credit markets offered only minor available liquidity as inter-bank rates continued to run at/near all-time highs
- Government / national central banks offer liquidity to the automotive sector

Falling **residual values** of vehicles

- Carmakers are spot on their initial residual value forecast but then make less money when selling off lease vehicles
- Past earnings of FS would have benefited from higher residual values



Adjustments in business as well as operational strategy are needed to succeed in the new economic environment



...Captive Finance companies should integrate solutions on operational strategy level as substantial chances on their current target operating model come along with it

There have also been remarkable developments over the past year that show how rapidly the industry is changing

New Product Categories available **this year**



Tata Motors introduced the 1 Lakh Nano igniting and **Ultra-Low Price** category



Honda introduced the FCX Clarity, the first **Hydrogen** powered mainstream vehicle, available this year in California



Tesla Motors completed their Roadster, a \$100K all **Electric Sports Car**

"Electrification" is coming **faster** than you think



GM continues to push the hype about the electric Chevy Volt as they are committed to launching it **by 2010**



CHRYSLER

Chrysler has also announced a line of Electric Vehicles that they forecast to the market **by 2012**



Toyota announced that their entire portfolio of vehicles will be hybrid **by 2020**

"Emerging" Markets are starting to **roar**



#18 Tata Motors **bought Jaguar Land Rover** from Ford, setting them onto a larger stage

1. Focus on Value

Cash flow is central to survival and strategic flexibility. Conserve capital and cut spending where they create little value, and redeploy to activities, products, markets that generate growth, margins, and true differentiation.



Do More with Less

- Cut capital and costs in low value activities and segments
- Redeploy to highest return in margin and profitable growth
- Increase variable cost content to adapt to changing demand



Focus on the Core

- Clean up the balance sheet via divestitures or wind-downs
- Kill off the weak portions of the business portfolio
- Move non-core activities to shared services or outsource
- Re-examine initiative portfolio – zero-based perspective



Re-align Relationships

- Weed out weak suppliers and unprofitable customers
- Tighten collaboration to manage demand volatility and risk
- Renegotiate all relationships to align to the new realities

2. Exploit Opportunity

The severity of the downturn will create opportunities to gain share and build key capabilities. Have a vision for what moves could reshape your industry toward your advantage.



Capture Share

- Make selective acquisitions to build share and capabilities
- Flexible pricing to defend or gain share in core businesses
- Rebalance offering portfolio to serve frugal customers
- Aggressively incent sales force



Build Future Capabilities

- Focus on keeping and motivating top performers
- Recruit new talent at lower cost
- Take advantage of global workforce
- Build IT into an enabler of business agility

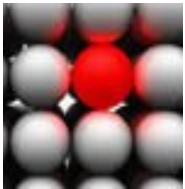


Change your Industry

- Pursue strategic acquisitions and alliances
- Position to win in a Globally Integrated economy
 - Double-down on growth markets
 - Optimize benefit of global operations

3. Act with Speed

The downturn will drive survival of the fast and agile. Its urgency provides a unique opportunity to overcome organizational inertia and barriers to strategic transformations.



Risk & Transparency

- Integrate and rationalize enterprise's business information
- Apply analytics to business risk and performance management
- Establish Risk Management governance and process



Leadership

- Appoint leadership and align around agreed course of action
- Get the right information to make decisions
- Take decisive action, avoid getting caught in analysis



Manage Change

- Act quickly and be flexible
- Set clear targets and measure results
- Dedicate and empower high-ranking executives as change leaders

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How can we take advantage of the wealth of information available from our new smarter things to make more intelligent choices?

- Connected vehicles
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-

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