



Munich Personal RePEc Archive

Impact of Globalization on the Australian Automobile Industry case of Ford Falcon

Molintas, Dominique Trual

11 December 2016

Online at <https://mpra.ub.uni-muenchen.de/96622/>
MPRA Paper No. 96622, posted 23 Oct 2019 12:27 UTC



Figure 1 The Ford Model T was introduced by Henry Ford 1863-1947 In 1908, production of the car in Australia began in 1925 (Getty Images, 2013 ABC Net)

Impact of Globalization on the Australian Automobile Industry case of Ford Falcon

ABSTRACT

Globalisation demand on productivity tells of an extreme competition and low profitability in the World Automobile Industry which blatantly opposes competitive equilibrium as it is highly regulated. Regulatory measures primarily in reference with trade and followed by ecological protection. Trade protectionism curtails the threat of substitution by way of import quotas and tariffs, administrative barriers and subsidies. Government subsidies have reached millions of dollars, Australia AUD1966M, Germany 1303M and 2908M in America. In the category of environment protection, the Energy and Conservation Act of 1975 costs roughly USD 2000 on compliance per manufactured unit. These aside the high cost on advertising, development research and labour unrest; dampen production locations burdened by overcapacity: Germany and Italy, France and Australia, USA and Japan. In a fragmented value chain stretching across multiple industries, manufacturers thinly spread as production entails specialty knowledge and expensive tools. No single company controlling enough market shares to influence world industry decisions that might induce radical industry transitions. Many outfits close shop over prolonged business slowdown.

Death of 80 year old National Treasure Ford Falcon Territory 2016 is a decision to end all losses over the past five years for the amount of 600 million dollars with 23 percent coming off 2012 fiscal year. This involves the retrenchment of 1200 Victorian jobs reasoned against low model volumes. Job loss accounts 650 workers from the assembly plant at Broadmeadows and 510 workers of the Geelong engine plant; after exhausting manufacturing alternatives to increase scale and competitiveness. Developing its presence since 1925, the plant is characterised as a vertically-integrated organisation with formidable technical capability and significant asset infrastructure. As a subsidiary of Ford Motor Company, it carries the corporate brand portfolio of Aston Martin, Ford, Jaguar, Lincoln, Mercury, Mazda, Volvo and Land Rover.

Keywords: *Ford Falcon shutdown, Automobile Industry Highly regulated, Oligopoly, Disequilibrium*

LITERATURE REVIEW

A deeper look into the world automotive industry recognises why such intensive competition and low profitability exists with its prominent feature away the concept of an efficient market—being highly regulated (Automotive Industry Center for Excellence 2013). A long ago national treasure impedes on the natural growth and innovation of automobile manufacture. Regulatory measures are in two distinct dimensions: the first dimension is in terms of trade and the second dimension concerns ecological conservation (Amram 1998).

Trade protectionism to cushion the authentic threat of substitution was made available through import quotas, tariffs, administrative barriers and subsidies (Federation of Automotive Products Manufacturers 2002). This resulted hindrances in international cooperation, opportunity loss in terms of cheaper inputs and revenues from possible business ventures or emerging regional markets. Thus bringing about an over capacity of the manufacturing arm common in leading production locations of Germany, Italy, France, Australia, USA and Japan (Mintzberg 2007).

On the second dimension, policies for safety and fuel emissions such as the Energy and Conservation Act of 1975, costs about USD2000 each manufactured unit on compliance. Then a high cost on advertising, and R&D which has introduced fuel alternatives: clean diesel, hydrogen fuel cells, electricity, natural gas, and sustainable biofuels –but barely economical (Greenber 2003).

Worrying labour unrest, several policy measures have been put out to support the industry; aside the fact that developed nations relies too much on the private vehicle, away public transport utilisation, including the codification of a minimum of two garages to a home. Subsidies amount to USD430 billion from Governments of 26 countries combined. Australian subsidy is USD1966 million, Germany USD1303 million and USA USD2908 million (Ramey, Tracking the source of the decline in GDP volatility: An analysis of the Automobile Industry 2015). Given this preconditioned environment, the rigor on productivity, quality and cost efficiencies and innovation; wanes (Chandler 1963). Effectually on a Global scheme, the bargaining power of the buyer is high and it is most likely to shift to any other suitable brand or model (Sturgeon 2009).

The volatility of the automobile sector is higher than many other segments of the manufacturing industry because it is approaching a life cycle decline where a number of exits occur in the oligopolistic market with a handful of players (Johnson 2008). The oligopolistic market states a stable equilibrium whereas any price decreases on the part of Ford would be matched, while increases on price would be ignored to gain switchover. Competition has put forward extreme rivalry, further characterised as buyers with price equilibrium highly inelastic, therefore demand remains the same or pretty stable (Cai 2014)

Market concentration stays with developed regions of higher income bands and humongous opportunity missed at the lower segments of the pyramid. To begin with, the world population is about 7.06 billion, with a chunk in developing nations in higher birth rates. With the exemption of Tata Motors, these data illustrate that the automobile has not reached the average global consumer, in spite an annual production of 60 million vehicles, USD5.1 trillion in revenues and 6 percent growth rate, 9 million personnel and 30 percent expansion in one decade. Jobs generation associated with auto manufacture is fivefold,

representing roughly 50 million jobs. The data further states a low entry barrier to industry and a high exit barrier from industry (Chandler 1963).

One unique feature is that the industry is both capital and labour intensive. Companies are just about the same average size, without any large concentration in a single outfit. This structure produces weak bargaining power against suppliers and consumers. (Andrewartha 2001). The industry is also characterised as fragmented. Aside the manufacture and sales of automobiles, the entire value chain stretches into other industries such as gas-stations; services, accessories and car parts; aluminium, computer chips, glass, iron, plastics, rubber, steel and textiles. Products cater to niche markets, manufacturers are thinly spread and production entails specialisation and expensive tools. Because there is not a single company holding a large enough market share to influence business decisions of the rest, the industry lacks the leadership needed for bold or radical moves. At the same time, many small outfits easily file bankruptcy closeouts during prolonged sales slowdown (Galvin 2001).

A huge amount of resources and a humongous potential market go to waste in obsession over slivers of share. Automakers need to focus on five Critical Success Factors to ensure competitive advantage in the global market in the next five years. The companies that are likely to succeed are those that can compete on the level with Tata Nano in terms of price and fuel efficiency (Barney 1991).

Consumers want affordability. As a first and foremost, product pricing must be slashed to about 25 percent of the going packages. This entails the tedious task of evaluating the cost and alternate suppliers on every piece and part on an automobile unit. In earlier times one would drive a fine piece to contend with the sociocultural perceptions of the vehicle. A woman who drives a minivan is thought to be a soccer mom and a man who drives a cool classic is very wealthy.

Although the buyer composition is also not large and therefore less authoritative, the switch to a more economical auto models is the recent inevitable trend. The shift in geographical coverage is directed to the Gulf region and Asia (Atkin 2001). Customers would want the seller to facilitate credit availability to be negotiated with banks and financial institutions beforehand launching production calendars, but right after design modelling are released from the drawing boards (Amram 1998). For a firm to survive it needs to garner consumer intelligence in emerging markets through profiling, surveys and studies on the competitive dynamics in these regions. On the overall there is a pent up demand for the automobile that can be captured by regaining market confidence in the mature markets and penetrating new emerging markets (Chandler 1963).

For a firm to survive it needs to revisit the value chain and pan out contingencies together with partners. Localise the supply base using dual sourcing methods, forge new partnerships and strengthen relations. This key element entails not just cheaper prices but new methods that consume less on labour and time. Raising operating efficiency can be done by stretching asset capacity as an ultimatum from the designing stages into the production floors. During seasons of high product demand, increasing capacity is to be foregone and compensated through overtime scheduling or additional temp staffing; and the entire team has to make do with tight inventories throughout the period regaining stability. To support this objective, revisions on performance evaluations are to be made, while discussion groups can be set up. Operating efficiency shall be measured in terms of reduced production cost, increased asset utilisation and improved quality. It is also

important to go over the services providers on the sales segment of the value chain and other support groups such as freight forwarders and legal services (Cope 1997).

A firm has to increase profitability to survive and can find for cheap but high value advertising mediums that do not occupy a large portion of product cost. Mobile adverts are one, and sharing costs with credit providers is another. In general those companies that have the ability to adapt quickly to these industry changes, practice teamwork and are managed by strong leaders eventually succeed. Firms having advantage are those not culturally distant from these emerging new market economies (Donoghue, Rational or emergent? Managing the uncertainty of systems development: A knowledge worker case study 1996).

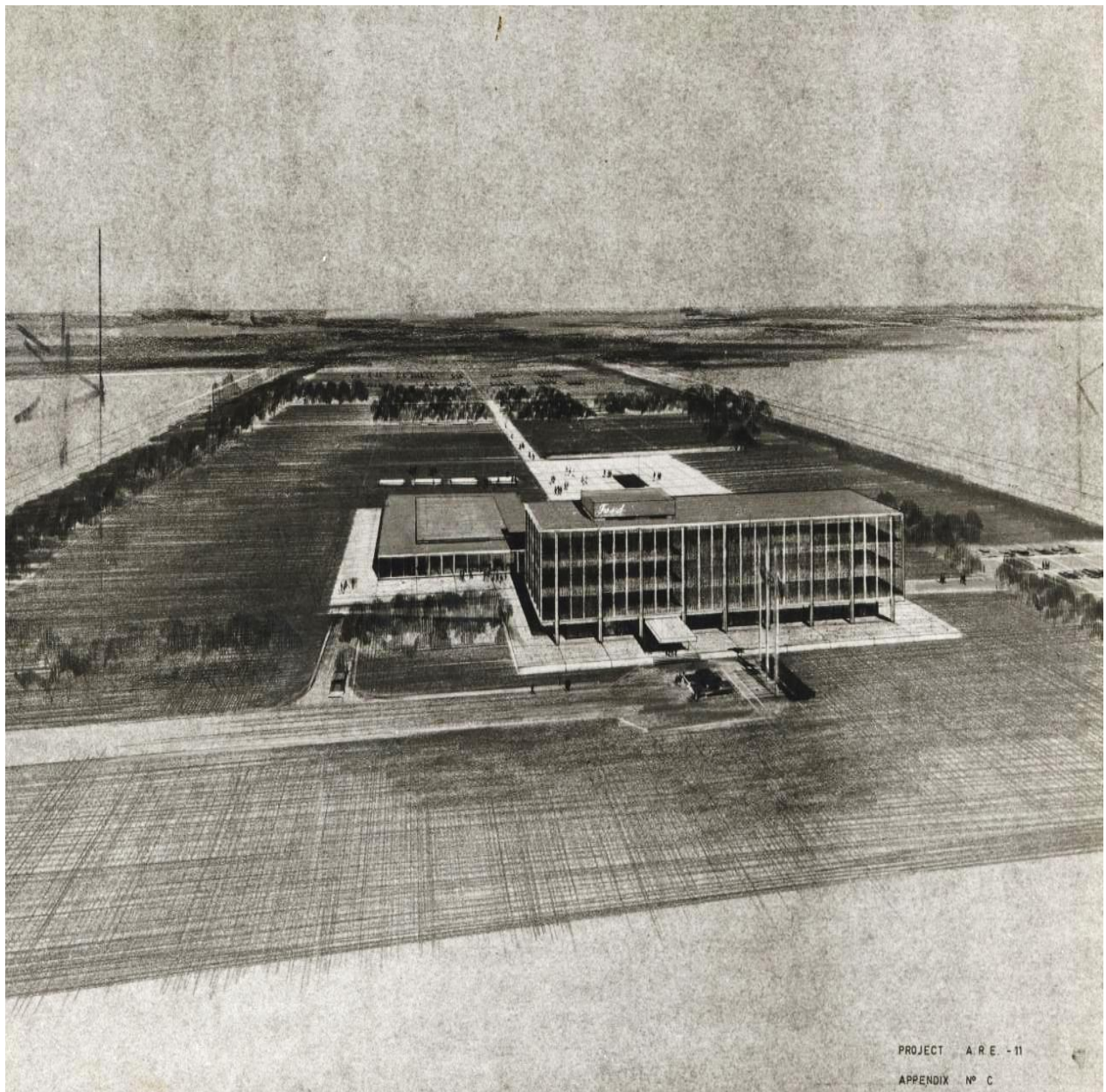


Figure 2 Ford Broadmeadows Drawing (*The Buchan group, Wolfgang 1960*)

FORD FALCON

Death of the 80 year old Ford Falcon and Territory by 2016 is a decision to end all losses over the past five years for the amount of 600 million dollars with 23 percent coming off 2012 fiscal year. This involves the retrenchment of 1200 Victorian jobs reasoned against low model volumes aside the fragmented marketplace in the region. Job loss accounts 650 workers from the assembly plant at Broadmeadows and 510 workers of the Geelong engine plant. The decision was reached after exhausting other manufacturing alternatives to increase scale and competitiveness. Notwithstanding, its overall cross border industry impact on the auto components and supply chains for Ford is not yet determined (KPMG International 2010).

Ford Australia is a National Treasure positioned as the state automotive manufacturer in the handle of a wide cross border supply chain network and engineering design. Developing its presence since 1925, the plant is characterised as a vertically-integrated organisation with formidable technical capability and significant asset infrastructure. As a subsidiary of Ford Motor Company, it carries the corporate brand portfolio of Aston Martin, Ford, Jaguar, Lincoln, Mercury, Mazda, Volvo and Land Rover (TechnoAssociates, Inc. 2013).



Figure 3 First Ford Falcon rolled off Broadmeadows in June 1960 (*Toscano N, e Sydney Morning Herald, 2016*)

Between 2003 and 2012, Falcon sales declined steadily from 95 967 units to 19 769 units, and treks behind the revenues of Toyota Corolla, Toyota Hilux, Mazda, Holden Cruze, Hyundai, Nissan and Navara. Ford Ranger. Although the presence of Ford pursues strongly with the 1500 workers to remain employed in nonmanufacturing roles (Field 1995). A bailout came through Government industry contribution of 12 million dollars particularly for these workers, and another 39 million dollars for community assistance of the affected regions. Ford Falcon is to receive 34 million dollars for industry assistance as pledged by the Government in exchange for manufacturing continuity in Victoria until 2016 (Alston 1996). One Globally competitive trade in Australia is the automotive

industry with 61 brands and over 350 models. Nonetheless the Australian automotive market is facing bigger foreign competition that prove difficult to cope in spite the Government tariff reductions. One of the three motor vehicle manufacturers in Australia is the Ford Motor Company, for facilities for manufacture in Geelong and the Broadmeadows assembly (Geelong Manufacturing Council 2009). It is to note that FG Falcon Range launched in 2008 received the five star safety rating as the first Australian made vehicle. In fact, Ford Australia continuous investments in facilities specifically in quality manufacturing productivity, design technologies and vehicle performance are typically linked to new models manufacture. Broadmeadows Assembly Plant for 31 million dollars includes a state-of-the-art laser-technology wheel alignment equipment and computerised welding facility for vehicle engine bay body assembly, 23 million dollars at Geelong Powertrain Plant for state-of-the-art facilities for engine manufacturing, and 14.2 million dollars at Geelong Stamping Plant for a series of new investments including a robotic rear-floor assembly facility (Barley 1985).

Automobile revenues in Australia are up 3 percent between 2011 and 2015, from 1.12 million units to 1.26 million units respectively. Transport fleet size in Australia has broadened between 2011 and 2015 from 15.19 million units to 18.01 million units respectively (Hyder 2012). The passenger car tire segment dominates the Australia tire market and is trailed by the light commercial vehicle tire segment. Logistics and built environment activity is up, and is thought to drive the demand for medium to heavy commercial vehicles (Chocoteua 2011).

By international standards the Australian automotive industry has shaped into a rare national asset of highly motivated skilled workers. The Australian vehicle manufacturers have confidently tested novel designs in the most competitive markets. By far, the exports of vehicles, including components far exceed the value of traditional basic exports of wool, meat, or dairy products. Nonetheless, the recent industry reformation has raised the expectation of low cost and high value vehicles resulting in a meagre 40 percent market share over the local consumers. Effectually a market share of 40 percent is exceptionally low in comparison to the Japanese, American and European competitors (Belton 1986).

FORD AUSTRALIA MEETS CHALLENGE

A significant wearing down in local market share from 62.5 percent in 1993 to 56.3 percent in 1995, then down to 53.8 percent in 1997, then 47.6 percent in 1997 then 40 percent in 2001. The factors identified are a severely concentrated effort of the local vehicle manufacturers in the specialisation of medium to large passenger cars. This however was in response to the policy prescriptive element to the automotive industry to cease lower volume car manufacture, sometime in the late 1980s, which was followed with relaxing the entry barriers for a large variety of imported brands and models. The shift in consumer preference due to the new options on the market tantamount to company loss of 600 million dollars over the past five years, with 23 percent coming off 2012 fiscal year (Donoghue, Rational or emergent? Managing the uncertainty of systems development: A knowledge worker case study 1996).

Ford Australia has embarked for stronger focus on vehicle export mechanisms particularly to the Middle East. Aside from which, the range of vehicle types coming off a core vehicle platform expanded with new designs to cater to new market segments. Pressure of competition induced higher efficiency levels, readiness and flexibility. The firm recognises the adverse impact of historical high levels of vertical integration that focus on key areas of expertise. These days advanced technologies for automobiles require higher levels of specialisation. Teamwork across the entire supply chain can result in cost reductions and quality gains. Lean manufacturing and just in time delivery eliminate unnecessary inventories. Ford identified a number of areas of operating costs and environmental impacts to be reduced to achieve an energy savings of 80 450 GJ energy

DRIVERS OF CHANGE

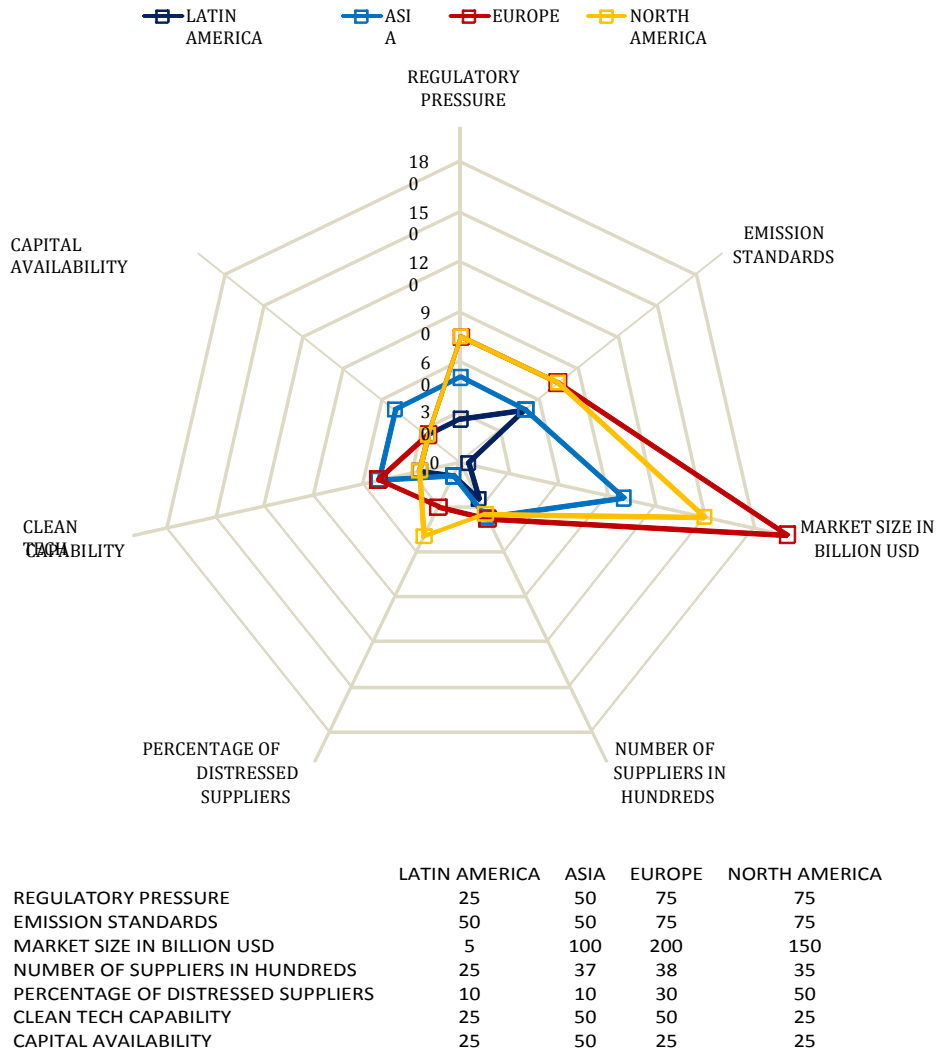


Figure 4 Adaptations of Ward Auto OEM Interviews

Figure 4 states the foremost driver for change: Market size, followed by the percentage of distressed suppliers, regulatory pressures and emission standards.

per year and 11,570 tonnes CO₂-e greenhouse gas emissions and improved wastewater capture to save 12 million litres annually, reaching reduced water consumption by 7 percent at the Broadmeadows (Dyer 1990). But in spite these all the company decision for closure involves the retrenchment of 1200 Victorian jobs or 650 workers from the assembly plant at Broadmeadows and another 510 workers of the Geelong engine plant (Ramey, Tracking the source of the decline in GDP volatility: An analysis of the Automobile Industry 2005).

AUSTRALIAN AUTOMOTIVE POLICY

The Australian automotive manufacturing industry experienced drastic change with the recent open and competitive home markets compared to any country in the world, coming off extreme protectionism of the inward-looking industry (Geelong Manufacturing Council 2009). Policy supports lower tariff for passenger vehicles which were reduced from 15 percent to 10 percent in 2005. Regardless of the bailout of Government of 12 million dollars particularly for workers, another 39 million dollars for community assistance, and 34 million dollars for industry, these do not compensate for the 600 million dollar loss (Harrigan 1983). Ford Australia has an elaborate supply chain with a purchase value of 1.5 billion dollars annually for services, components and materials. Some key local component suppliers complete an annual value of purchases by Ford Australia for about 500 million dollars. The supplier list includes Venture, BTR, Spicer, Bosch, PBR, Walker, Plexicor, Autoliv, Hella and ACL (Limited 2005). On the distribution side of Ford Australia vehicles, parts and technical service expertise there are about 240 independently owned dealerships that directly employ more than 11,000 workers, accounting a capital investment of 1.03 billion dollars throughout Australia. This distributorship segment is to continue to operate even after the closure of Ford Company Australia (Harbour 2001).



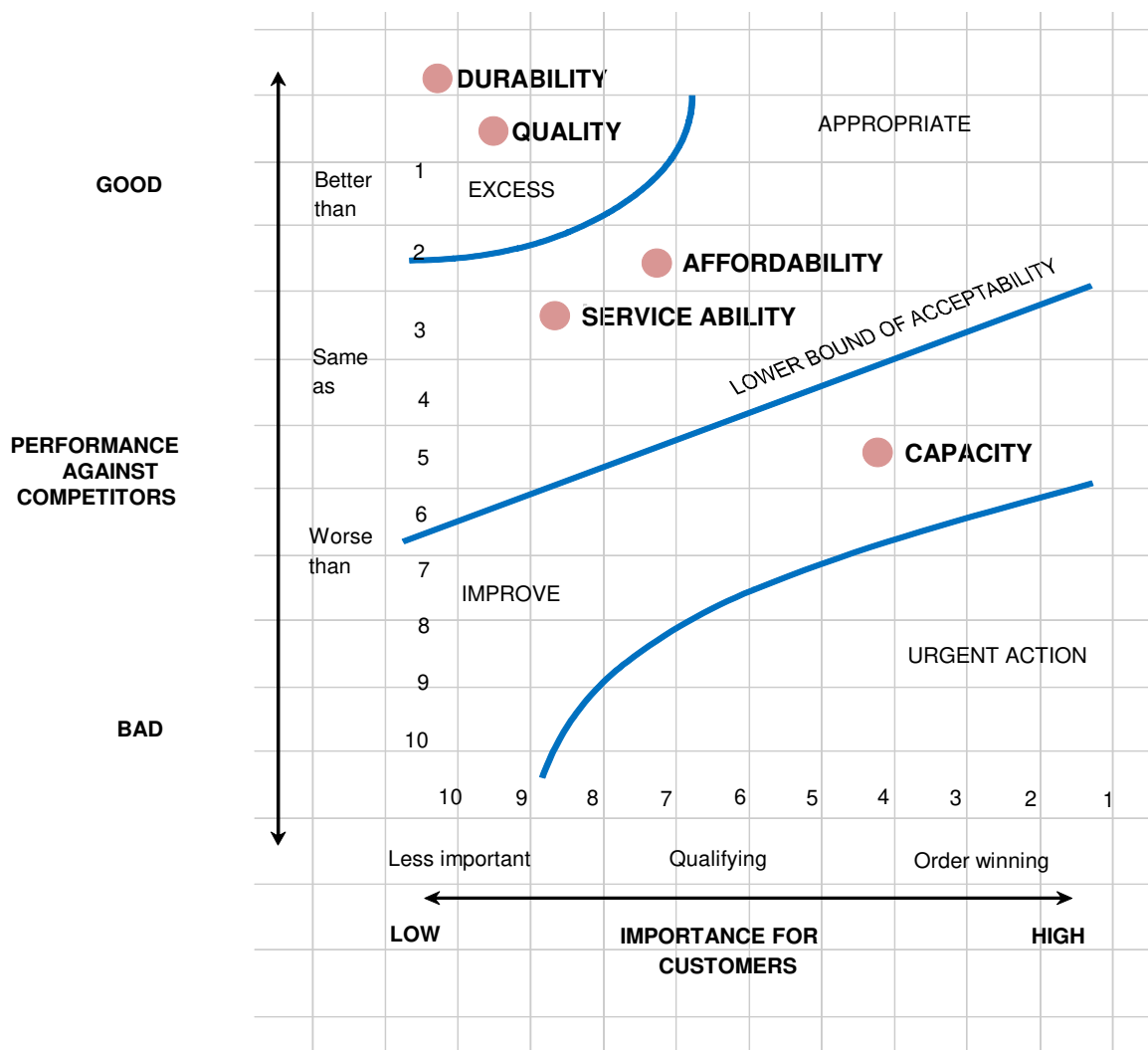
Workers at the Ford plant in Geelong, whose future lies under a cloud (Wayne Taylor 2013)

SECTOR SCALE AND COMPETITIVE ADVANTAGE

Strategy considerations start out by knowing where the enterprise stands in the competitive landscape, to have the competitive advantage. As a small business, the positioning defined synthesises the customer preference of durability and quality, affordability and service ability, and manufacturing capacity (Kisiel 2004). Illustrated in the figure below, Ford Falcon cannot compete

in terms of manufacturing capacity unless it allows a buy in of the Chinese manufacturers. But its small scale manufacture has a reputation of durability and quality, better than competition and rates same as others in terms of serviceability and affordability (Lienert 2013).

Strategy is the brainchild of visionary leadership. The hierarchy of strategy is corporate strategy followed by business strategy, followed by functional strategy (Wuthnow 2018). Corporate strategy leads the general direction of the enterprise. Samples of which are strategies for stability, growth or for organisation retrenchment (Walsh 2008). Business strategy is focused on specific industry or market goals that could be competitive for profit oriented organisations and cooperative strategies for Government or nonprofit organisations. A functional strategy relates to planning or support infrastructure that enables the business strategy. An example would be a technological strategy that enables the business strategy (Walton 2016).



Competitive Advantage Automobile Industry Australia (Authored 2013)

Price sensitivity is an inevitable consideration of the customer. Value for money would mean to buy cheap but rationally durable products. Capacity in the dimension of manufacturing encompasses numerous practices in use, formed objectives rooted in the production structure;

precisely to raise or shrink capacity levels. Paired with the history of related issues, the volume production as per plant capacity is comparative to input output performance. Capacity is said to be sustained and predictable. The goal in manufacturing activities is to enable robust performance described as more output for lesser input (Hines 2017).

The concept of *capacity* with regards to strategy centres on resources of the firm that can define the competitive advantage. In this case, resources are defined as assets, routines, practices that add value and non-substitutable since this differentiates itself from its competitors. Lean manufacturing principles and techniques advance these unique operating capacities, mainly through the application of resources. Thus capacity recognises intricate set of daily tasks that over the long run constitute the company core wisdom described as a company secret that is less transferable (Lu 2011). Product life is the technical proof of the value of durability, insofar it is economical. A durable product lasts longer, is slow to deteriorate or expire. As an example, the filament of a light bulb burns out after so many hours of utilisation, requiring replacement. In other words, repair is impossible (Xiong 2012).

For *value for money*, patrons anticipate the cost of inconvenience in relation to potential disruptions in the use of the product due to repair. A reliable brands or a model over the long run saves time and money. With that it is sufficient to state that durability can be defined as the service life render by the product beforehand it completely breaks down. Reversely, the frequent repair and malfunction of a product would mean poor durability. (Mmutle 2017). A basic inference as regards durability is that durability and reliability are consistent. When there are faults in a product or end of product life is short, repair and maintenance costs surpass the cost of a more unfailing, competitive brand or model. Undeniably, a product that is durable has greater market potential. In fact enterprises encourage consumer satisfaction by offering parts warranty of a product. Largely, the length of product life is an indicator of quality distinction (Oraopoulos 2012).

In manufacturing, *quality* denotes the product key functional characteristics; such as for aircraft performance: acceleration, handling, cruising speed, glide and comfort; or for audio visual gadgets, performance is relative to sound and picture clarity, colour, and signal reception capabilities (Cai 2014). A product often comes with a reputation of quality, ranked by the consumer market as to performance. As an example good quality tyre is manufactured with special compounds that enable road grip, abrupt stops and sharp cornering (Gowda 2014). It can also be said that quality is the predictor of product malfunction, fault or failure probability within given duration. The common indicator of product quality is the mean duration before fractures or fails, and the average time between breakdowns. A customer preference in quality is in relation to the inconvenience, loss of opportunity and cost, as a result of a flat tyre (Falk 2010).

The perception of *product serviceability* as an indicator of competitive advantage is influenced largely by courtesy, competence, speed, and ease of repair. Apart the frequency or scarcity of product breakdown, the restoration period marks the product up or down in terms of performance measure (Shi 2011). Managing customer complaints is a serious task, particular when this concerns the serviceability of a product. Subconsciously the customer associates the product with the handle of servicing requirements. Serviceability is then defined as the enterprise response, measured by the average time that a complaint is managed and that average time that product repair is accomplished. Both technical competence and managing situations is expected (Turki 2012). More significantly, since most consumers equate fast repair and less product malfunction with good quality. Professional demeanour and courtesy is good measure of prompt serviceability. Even yet, consumers can be dissatisfied after completion of repairs but the handle of complaints forms company reputation for quality and service (Shi 2011).

Table1 Perceived Trends in the Automotive Industry (*Adaptation of Shoemaker 1995*)

- T1 Market is shifting to the lower income bracket with pent up demand in Asia Region
- T2 Mature niche markets will continue to grow in Europe particularly on the hybrid models, and in the Middle East for the coupe classics
- T3 Quotas and entry barriers shall be relaxed, allowing for more rapid integration on the supply chain
- T4 Country emission standards are becoming more stringent
- T5 Urban planning emphasises on walkability and public transportation nodes
- T6 Capital availability has shrunk while investors give a wary look of future
- T7 Cross Border Mergers and Acquisitions are to be expected between firms, more gain footage into India and China

Into the next five years, substantial structural changes on the world automotive industry are expected to turn up. The Drivers of Change identified are: market size, regulatory pressure, number of suppliers and percent of distressed suppliers, clean tech capability, country emission standards, and capital availability (Peng 2013). Drivers of change are the mechanisms of industry trends which affect rivalry and profitability, as summarised in the box. Profitability shores up in varying degrees depending on regional geographical characteristics, and distinctly by the capability of a firm to respond to change (Collie 2012).

Historical profit from American markets wane with new trends indicated as T1 and T1 that shifts demand into the Asia region for good revenue prospects (Organisation for Economic Co-operation and Development 2009). A stiff rivalry but high profitability is expected in Asia and North America, while a mid-level demand persists in Europe. Production shares of non-OECD areas increased to one car in five from one car in ten, while the production shares in Japan and USA fell by 10 percent between 2000 and 2007 (Dargay 2007). A good example is Hyundai and affiliate brand Kia, both on an upward trend, having shifted focus on improving brand perception and quality rankings on its local market, rather than aggressively selling in USA (Greenber 2003). Trend three or T3 is on the go with many manufacturers interfacing supply chains from end to end, instating strategies for cost reduction and increased operating efficiencies. Profit margins improve, bottlenecks eliminated, inventories lean, and sales incentives, shipping and advertising budgets tightened (Peng 2013). The Honda manufacturing strategy for value creation uses direct method on supply chain optimisation. Vehicles are built where sold, with over 100 manufacturing plants across 30 countries, and rapidly expanding in India and China (Collie 2012). Booze and Company survey finds 19 percent of industry focus on organisation capacity and believes yields are more over price (Ramey, Tracking the source of the decline in GDP volatility: An analysis of the Automobile Industry 2015).

Trends T4 and T5 can negatively impact on the world automotive industry, given the strong probability of substitution. Hybrids gain popularity in Europe, while the US Government consistently supports power train alternatives (Grundy 2006). Toyota is focused on the hybrid sector and has an upper hand in the more mature US market (Halliday 1999). A market shift-over largely depends on how quickly the technology develops and Government policy.

Trend T6 sends the industry back to basics of operating efficiency, away overcapacity, –simply to raise asset profit ratio. Firm rivalry over high profit at lower production levels, or reversely increasing asset utilisation and reducing the price per volume; shedding poor performing assets and partnerships are alternatives to gain economies of scale (W. a. Kim 2004). Toyota strategy is a joint program with suppliers, reducing procedures in the making of cars and car parts, saving about USD2.6 billion (Harbor 2001). Daimler Chrysler took up strategic partnership with Mitsubishi in a decisive strong presence in the Asian market (Sturgeon 2009).

Table 2 Key uncertainties on World Automobile Industry & correlations (Adaptation of Shoemaker 1995)

- U1 What if petroleum prices soar to an unprecedented level and slump the automobile industry?
- U2 What if a scientific breakthrough in solar powered automobile turns gasoline operated models obsolete
- U3 What if China and India collaborate on a joint ambitious venture and pirate the best talents of Japan and Germany to dominate the World Automobile Industry?
- U4 Is the international pressure on conflict minerals going to reduce materials cost?
- U5 Is global warming to escalate drought areas and push emission taxes to the extreme?
- U6 What if Tata Nano fails to deliver on performance capabilities

	U1	U2	U3	U4	U5	U6
U1	(+)	(-)	(+)	(+)	(-)	+/-
U2	(+)	(+)	(+)	(+)	+/-	+/-
U3	(-)	(+)	(+)	+/-	(-)	(-)
U4	+/-	0	(+)	(+)	(-)	0
U5	(+)	(+)	(+)	0	(+)	0
U6	(-)	+/-	(+)	(+)	+/-	(+)

Trend T7 gains footage into India or China, and the rest of Asia. Company mergers ease on debt burden, minimise capitalisation risk, perk up liquidity, and exploit labour arbitrage. This raises profitability and concentrates industry rivalry (Sturgeon 2009). An example is the divesture of the gas-guzzling Hummer model of General Motors to a small Chinese company relying on Hummer's mounting popularity in China. GM and Ford also forged agreements with Korea LG independent battery supplier. Ford's diesel and direct-injection engine technologies are bartered for licenses on hybrid technologies from Toyota Aisin Seiki (Ramey, Tracking the source of the decline in GDP volatility: An analysis of the Automobile Industry 2005).

Nevertheless, Trends are easily outweighed when uncertainties come into play. A matrix on the correlation of uncertainties is shown in the box to give a better understanding of the real scenario complexities (Shoemaker 1995). The weightings indicate close correlation between uncertainties which impede upon another either positively or negatively. The reason why uncertainties are explored is to derive scenarios and plan mitigating measures.

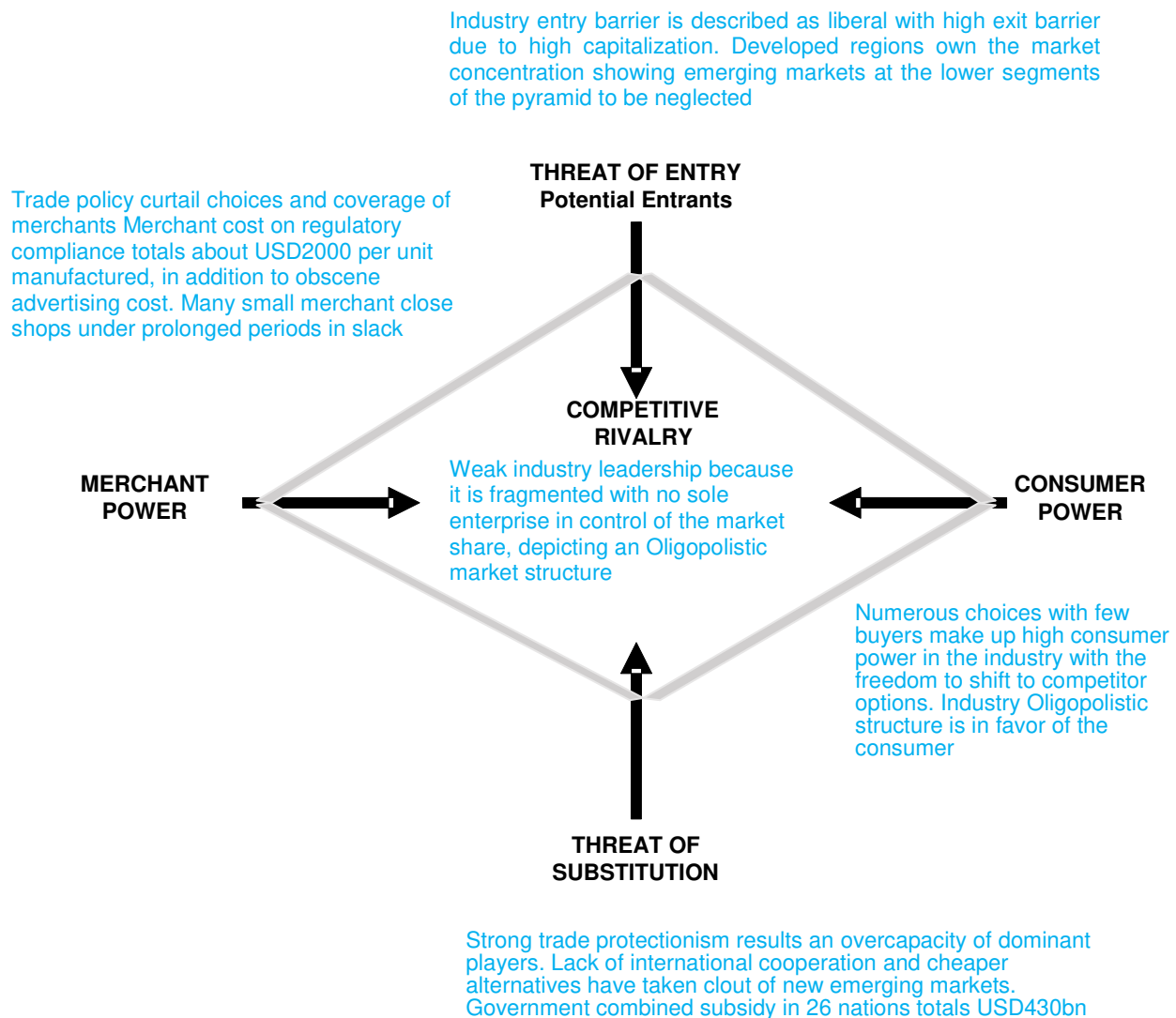
Consumer clamour for affordable vehicles and credit inclusion using manageable payment schemes is the foremost challenge but does not rank first in the 2011 survey by the Consumer Reports National Research Center. While affordability is for market expansion and sheer industry survival, safety, performance and appearance are definitely still part of the equation (Consumer reports 2013). The research centre synthesised a random nationwide telephone survey from 2045 adults and compiled survey data from 1702 households with one car ownership and published the consumer perceptions on automobile preferences as follows. Safety ranks first with a score of 65. The identified brands for safety are Ford, Honda, Mercedes-Benz, Toyota and Volvo. Quality is second with a score of 57. The brands identified for quality are Chevrolet, Ford, Honda, Mercedes-Benz and Toyota. Value comes third with a score of 51. The brands identified for value are Chevrolet, Ford, Honda, Hyundai and Toyota. Automobile performance ranks fourth with a score of 49. The brands identified with performance are BMW, Chevrolet, Ford, Toyota and Porsche. Environmentally friendly and green initiatives received low consumer preference with a score of 29. The brands identified are Chevrolet, Ford, Honda, Smart and Toyota. Design and style ranks sixth with a score of 24, even below the environmental concerns. The brands identified for style are the BMW, Cadillac, Chevrolet, Lexus and Mercedes-Benz. Technology innovation ranked last with a score of 18. The brands identified with innovation are BMW, Ford, Lexus, Mercedes-Benz and Toyota (Consumer reports 2013).

A notable difference between genders was observed on the factor of safety, the women perceived safety far more important with an overall score of 73 and men scored 57. Men place

importance on design and style with a score of 27 and women scored 20. Men also score technology and innovation twice as much with a grade of 21 versus a score of 14 for the women (Consumer reports 2013).

Trends also indicate an increasing preference for smaller sized units; although small cars design need to build a perception of strong value. The low performers among the brands are Fiat, Mini, and Smart (Sharifi 2013). Drawing on these reviews, the Critical Success Factors points at: A new portfolio of high performance smaller sized automobiles that look good, are safe, affordable and easy to pay. To compete, firms need to deliver the critical factors of affordability and credit access, vehicle size, fuel efficiency, and engine performance and battery life. Affordability entails cost reduction measures across the pipeline and asset performance evaluation. While R&D for innovation still sits a crucial task in the evolution of the industry, a strong marketing arm is fundamental (Peteraf 1993).

World Automobile Industry Analysis



CONCLUSION

The theoretical construct underscores disequilibrium using the Porter Model Industry Analysis Model to point out oligopolistic structure. Fundamentally this is a case study of the Australian Automobile Industry, disequilibrium is characterised as the loss of equilibrium that is most profoundly associated with price stability alongside demand and supply. Mercantilism is the common economic practice pursued by Western Governments since the 16th century for the accumulation of the largest possible share of wealth by way of Tariffication. Whereas all subsidy and Automobile Policy Agreements no longer exists to discriminate open trade through genuine levels of productivity—Ford Falcon is caught up in the disequilibria.

The Bertrand Model points out that in an oligopolistic industry, competition may occur with price instead of output. Thus it can be assumed that Governments compete with price, not quantity. Having that tin as a commodity is homogeneous, other buying Governments are forecast to purchase from the seller with the lowest price. In which case, tin producing countries have the incentive of reducing prices below rivals. More importantly, is that these Governments of automobile producing countries can conspire or collude, and decide to charge a uniformly towering price that optimises profits. The Nash equilibrium equation supports the Bertrand Model as a solution impression of a non-cooperative game involving players, in which each player is said to recognise the equilibrium strategies of the other players. Therefore no player has anything to gain but by altering own strategy unilaterally.

Development economist John Kenneth Galbraith asserts that development must consist of a series of disequilibria. Development Economics is a segment of economics that deals with the causes and cures of the perpetuating nature of poverty. That is: A less affluent society is constantly confronted with deprivation making it rather difficult to envision as an aspiring nation. Disequilibria that levels the playing field, such as in this case Globalisation has caused disequilibria to the advantage of the SME.

Any change in the existing equilibrium as shown in the Porter model, such as the abolition of subsidy results in disequilibrium, which then places other firms opposite of such void.

REFERENCES

- Alston, M. "Backs to the wall: Rural women make formidable activists." In *Social change in rural Australia*. Rockhampton: Central Queensland University, 1996.
- Amram, M and Kulatilaka N. *Real options: Managing strategic investment in an uncertain world*. Boston: Harvard Business School Press, 1998.
- Andrewartha, G. and Armstrong H. *Developing management skills*. Frenchs Forest, Sydney: Frenchs Forest, 2001.
- Atkin, J. *From values and beliefs about learning to principles and practice*. Incorporated Association of Registered Teachers of Victoria, Jolimont: Incorporated Association of Registered Teachers of Victoria, 2001.
- Automotive Industry Center for Excellence. *Auto Industry Regulatory Consulting and Training*. Melbourne: Consulting.cfm, 2013.
- Barley, S and J Maanen. "Cultural organization: Fragments of a theory." In *Organizational culture*, 31-53. Thousand Oaks: Sage Publications, 1985.
- Barney, JB. "Firm resources and sustained competitive advantage." *Journal of Management* 17, no. 1 (1991): 99-120.
- Belton, V. "A comparison of the analytic hierarchy process and a simple multi-attribute value function." *European Journal of Operational Research* 26 (1986): 7-21.
- Cai, H., Yu, T., and X. Chenglong. "Quality-oriented classification of aircraft material based on SVM." *Mathematical Problems in Engineering* 2014 (2014): 1-12.
- Chandler, A.,. *Strategy and structure: Chapters in the history of American enterprise*. Boston: MIT Press, 1963.
- Chocoteua, V., Drake, D., Kleindorfer, P., Orsato, R., Roset, A. *Collaborative innovation for sustainable fleet operations: the electric vehicle adoption decision*. INSEAD, France: Institut Européen d'Administration des Affaires, 2011.
- Collie, B., Corwin, S., and Kakkar,A. "Optimism returns to the American automotive industry." *Strateg + Buisness*, June 4, 2012: PwC network.
- Consumer reports. *Consumers see fewer differences among car brands In our new survey, Toyota, Ford, Honda, and Chevrolet continue to lead in overall perception, but by a slimmer margin*. Consumer reports, New York: Consumer Reports, Inc. , 2013.
- Cope, B and Kalantzis M. *Productive diversity*. Random House, Sydeny: Random House, 1997.
- Dargay, J. Gately, D. and Sommer, M. " Vehicle ownership and income growth, worldwide: 1960-2030." *Energy Journa* 28, no. 4 (2007): 143-170.

- Donoghue, L and S Frenkel. *Rational or emergent? Managing the uncertainty of systems development: A knowledge worker case study*. Centre for Corporate Change, Sydney: Centre for Corporate Change, 1996.
- Donoghue, L and S Frenkel. *Rational or emergent? Managing the uncertainty of systems development: A knowledge worker case study*. Centre for Corporate Change, Sydney: Centre for Corporate Change, 1996.
- Dyer, J. "Remarks on the Analytic Hierarch Process." *Management Science* 36, no. 3 (1990): 249–258.
- Falk, B., Quattelbaum, B., and Schmitt R. "Product Quality from the Customers' Perspective – Systematic Elicitation and Deployment of Perceived Quality Information." Edited by Mak K.L., Maropoulos P.G. Huang G.Q. *Proceedings of the 6th CIRP-Sponsored International Conference on Digital Enterprise Technology. Advances in Intelligent and Soft Computing*. Berlin: Springer, 2010.
- Federation of Automotive Products Manufacturers. *Submission to the Productivity Commission Review of Post 2005 Assistance Arrangements for the Australian Automotive Industry*. Canberra: Productivity Commission, Government of Australia, 2002.
- Field, L & Ford B. *Managing organisational learning from rhetoric to reality*. Melbourne: Longman, 1995.
- Galvin, J. *Racing the clock- General Motors needs a jump start. Is its new e-business strategy enough to help it turn the corner?* Stanford University Press, Boston: Ziff Davis Smart Business for the New Economy, 2001.
- Geelong Manufacturing Council . *Ford Motor Company of Australia Broadmeadows Assembly Plant Case Study*. Geelong Manufacturing Council , Geelong: State of Victoria, 2009.
- Gowda, R.B.S., Udayagiri, C.S. and D.D. Narendra. "Studies on the process parameters of rapid prototyping technique (Stereolithography) for the betterment of part quality, ." *International Journal of Manufacturing Engineering* , 2014: 11.
- Greenber, K. "Automakers steering drivers into evolution revolution." *Brand Week* 44, no. 1 (2003): 6.
- Grundy, T. "Rethinking and reinventing Michael Porter's five forces model." *Strategic Change* 15 (2006): 213-215.
- Halliday, J. "GM seizes web's 1-to-1 Marketing opportunities-automotive: Aggressive Ad spending and innovative campaigns boost auto giant to top." *Advertising Age*, 1999: 52.
- Harbor, R. "Small car profit strategies." *Automotive Industries* 18, no. 1 (2001): 13.
- Harrigan, K. R. and Porter, M. E. "End-game strategies for declining industries." *Harvard Business Review* 61, no. 4 (1983): 111-120.

- Hines, P. and Rich, N. "The seven value stream mapping tools." *International Journal for operations Production Management* 17, no. 1 (2017): 46–64.
- Hyder, V. *Study into domestic and international fate of end-of-life tyres*. Department for Environmental Protection, Melbourne: Australian Government, 2012.
- Johnson, G, Scholes K and Whittington R. *Exploring corporate strategy text and cases*. Edited by Financial Times. New York: Prentice Hall Publishing Company, 2008.
- Kim, WC and Mauborgne, R. "Blue ocean strategy." *Harvard Business Review* 82, no. 10 (2004): 75-84.
- Kisiel, R. "Engineers use high-tech glasses to spot problems." *Automotive News* 79, no. 6119 (2004): 22.
- KPMG International . *The transformation of the Automotive Industry: The environmental regulation effect*. Deloitte, Ernst and Young, New York: KPMG, 2010.
- Lienert, D. "Why Toyota is beating Ford." *Forbes*, October 30, 2013.
- Limited, Ford Motor Company Of Australia. *Submission to the Productivity Commission Review of Post 2005: Automotive Policy Arrangement*. Australian Productivity Commission, Canberra: Ford Motor Company, 2005.
- Lu, X., Jia, Z., Yang, J., and Liu, H. "Design and implementation of lean facility layout system of a production line." *Journal of Operations Management* 18, no. 5 (2011).
- Mintzberg, H. *Tracking strategy: Toward a general theory*. London: Oxford University Press, 2007.
- Mmutle, T. "Customers' perception of Service Quality and its impact on reputation in the Hospitality Industry." *African Journal of Hospitality, Tourism and Liesure (Google Scholar)* 6, no. 3 (2017): 1-25.
- Oraiopoulos, N., Ferguson, M.E. and L. B. Toktay. "Relicensing as a secondary market strategy." *Management Science* 58, no. 2 (2012): 1022–1037.
- Organisation for Economic Co-operation and Development. *Responding to the economic crisis: Fostering industrial restructuring and renewal*. Organisation for Economic Co-operation and Development, Paris: Organisation for Economic Co-operation and Development, 2009.
- Peng, B., Jullens, J., and Russo B. *Booz and Company's Annual U.S. Automotive Industry Survey and Confidence Index*. Booz and Company's , New York: Slides Share, 2013.
- Peteraf, M. "The cornerstones of competitive advantage: A resource-based view." *Strategic Management Journal* 14, no. 3 (1993): 179-191.
- Ramey, V. and Vine, D. *Tracking the source of the decline in GDP volatility: An analysis of the Automobile Industry*. Finance and Economics discussion Series, No. 2005-14, Federal Reserve Board, Washington: Federal Reserve Board, 2005.
- Sharifi, J. "Best car blogs." *US News Best Cars*, October 9, 2013.

- Shi, J., Zhang, G., Sha, J. " Optimal production planning for a multi-product closed loop system with uncertain demand and return." *Computers and Operations Research* 38, no. 3 (2011): 641–650 .
- Shoemaker, P. "Scenario planning: A tool for strategic thinking." *Sloan Management Reviews*, 1995: 25-40.
- Sturgeon, T. and van Biesebroeck, J. *Crisis protection in the automotive industry: a global value chain perspective*. The World Bank Group, New York: WB, 2009.
- TechnoAssociates, Inc. *Automotive industry seeking electronic solutions to four main issues*. TAI, London: Industry Trend, 2013.
- Turki, S., Hennequin, S., Sauer, N. "Perturbation analysis-based optimisation for a failureprone manufacturing system with constant delivery time and stochastic demand." *International Journal for Advanced Operations Management* 4, no. 2 (2012): 124–153.
- Walsh, J.P. "Selectivity and selective perception: an investigation of managers' belief structures and information processing." *Academy of Management Journal* 31, no. 4 (2008): 873-896.
- Walton, R.E., and J. R. Hackman. "Groups under contrasting management strategies." In *Designing Effective Groups*, edited by Paul S. Goodman and Asso. San Francisco: Paul S. Goodman and Asso, 2016.
- Wuthnow, R., and M. Witten, M. "New directions in the study of culture." *Annual Review of Sociology* 14 (2018): 50-51.
- Xiong, Y., Yan, W., Fernandes, K., Xiong, Z.-K. and N. Guo. "Bricks versus clicks: the impact of manufacturer encroachment with a dealer leasing and selling of durable goods,." *European Journal of Operational Research* 217, no. 1 (2012): 75–83.