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Car Brands in a Competitive Environment: How Are They Building Their Value Creation Processes?

Abstract. *A value creation process, usually presented in the form of a complex flowchart and placed at the beginning of a report, describes the material and financial inputs and outputs of the commercial process, as well as the corporate philosophy, core values, strengths, key issues, management policies or business strategies. This article is devoted to analyzing the content and structure of global car brands' value chains and value creation processes. The purpose of the research is to find out what is the vision of the own processes of value creation by car manufacturers, identify indicators that are used to assess capital inflows and outflows, and single out the features of value chains specific to the automobile industry. The information base of the research is the annual or integrated reports of five global car brands – Mazda, Nissan, Suzuki, Saab, and Isuzu. The authors used scientific methods of generalization, grouping, comparison, and induction to process the collected data. Based on the analysis of the value creation process schemes presented in the annual/integrated reports, the structure and composition of the value creation processes are outlined in tabular form for each car manufacturer. It was found that the approaches to revealing the structure of value-creation processes in the researched reporting are similar in most respects. The study results show that all value chains contain the primary stage, where resources are attracted for further production; the middle link, where production is actually carried out; and the final link, which is directed to the delivery of products to the final consumer. The article defines the structural elements of capital inputs, upward activity, operations, downward activity and capital outputs as stages of the value-creation process of car manufacturers.*

Keywords: *global brands, car manufacturers, value chains, value creation process, non-financial reports, integrated reports.*

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Автомобільні бренди в конкурентному середовищі: як вони будують свої процеси створення вартості?

Анотація. *Процес створення вартості, зазвичай представлений у формі складної блок-схеми та розміщений на початку звіту, описує матеріальні та фінансові вхідні ресурси і результати комерційного процесу, а також корпоративну філософію, основні цінності, сильні сторони, ключові питання, політику управління або бізнес-стратегії. Ця стаття присвячена аналізу змісту та структури ланцюгів вартості та процесів створення вартості глобальних автомобільних брендів. Метою дослідження є: з'ясувати яким є бачення*

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власних процесів створення вартості автомобільними виробниками; виявити показники, які застосовуються для оцінки вхідних та вихідних потоків капіталу; виокремити особливості ланцюгів вартості, характерних саме для автомобільної галузі. Інформаційною базою дослідження є річні або інтегровані звіти п'яти глобальних автомобільних брендів – Mazda, Nissan, Suzuki, Saab, Isuzu. Для опрацювання зібраних даних автори використали наукові методи узагальнення, групування, порівняння, індукції. На основі аналізу схем процесів створення вартості, представлених у річних/інтегрованих звітах, викладено структуру та склад процесів створення вартості у табличній формі для кожного автомобільного виробника. З'ясовано, що підходи до розкриття структури процесів створення вартості у досліджуваній звітності є схожими за більшою частиною ознак. Результати дослідження свідчать, що всі ланцюги вартості містять первинну стадію, на якій залучаються ресурси для подальшого виробництва, середню ланку, на якій власне і здійснюється виробництво та фінальну ланку, яка направлена на доставку продукції до кінцевого споживача. У статті визначено структурні елементи вхідного потоку капіталу, висхідної діяльності, операцій, низхідної діяльності та вихідного потоку капіталу як етапів процесу створення вартості автомобільних виробників.

Ключові слова: *глобальні бренди, автомобільні виробники, ланцюги вартості, процес створення вартості, нефінансова звітність, інтегрована звітність.*

INTRODUCTION

In the modern world, all economic processes at the global level, particularly in the corporate sector, are very interconnected – the ramified structure of multinational corporations doesn't enable us to clearly split their activities and processes into separate stages (source supply, manufacturing, sales, delivery, post-sales support, etc.). The increasingly popular practice of preparing non-financial (integrated) reports by global corporations enables customers and external stakeholders to see a value creation process – how capabilities and resources are transformed within a corporation to be turned into finished goods delivered to customers. A value creation process is a derivative of a value chain notion adapted to meet the information needs of different users unaware of internal processes in corporations. Usually presented in the form of a complex flowchart and placed at the beginning of a report, a value creation process describes not only material and financial inputs and outputs of a commercial process but also corporate philosophy, core values, strengths, key issues, management policies, or business strategies.

LITERATURE REVIEW

A value chain notion, which was introduced by M. Porter in 1985, describes the full range of activities required to bring a product or service through the different phases of production, distribution, and final disposal after use. In the process of this movement from one phase in the chain to another, a product or service gains added value. Thus, the value chain can be used to decompose a business into pivotal activities, which enables the identification of possible competitive advantages. M. Porter states that value chain links encompass inbound logistics, operations, outbound logistics, marketing and sales, and service (Dubey et al., 2020). The necessity to realise what processes, activities, organisations, and structures are to be applied to ensure the transformation of raw materials into finished goods has led to the emergence of value chain thinking. Developed in the 1990s, value chain thinking consists of four steps: value discovery (interaction, imagination, and articulation – value-creating ideas), value design (conception, detailing, and testing – actions to add more value), value delivery (finalisation, delivery, monitoring – delivering an expression in the form of goods or services to the targeted customers), and value capture (capturing the most value possible while maintaining competitive advantage and the image) (Simatupang et al., 2017). Literature of the past decade defines a global value chain as a set of activities divided into 3 groups: upstream activities involving design and research and the commercialisation of creative endeavours; midstream operations related to manufacturing, standardised service delivery and other repetitive processes in which commercialised prototypes are implemented on a mass scale; downstream activities comprising marketing, advertising, brand management, and after-sales services (Hernández & Pedersen, 2017). Value chain analysis examines the labour inputs, technologies, standards, regulations, products, processes, and markets in specific industries and international locations, thus providing a holistic view of industries from the top down to the bottom up. Most recently, four broad changes have begun to alter existing global value chains' dynamics: rationalisation, reorientation towards Asia, automation/additive manufacturing, and servicification. The latter two are based on changes ushered in by "Industry 4.0" (Frederick et al., 2017). Although the composition and the content of a value chain in the theoretical context have been considerably examined, there is a need to identify the peculiarities of its structure in enterprises in certain industries, particularly automotive.

PURPOSE OF THE ARTICLE

The article aims to:

– ascertain corporations' visions of their value creation processes,

– identify the content of their structure elements,

– reveal what indicators are used to measure capital input and capital output,

– and highlight features of value chains inherent to the automobile industry.

RESEARCH METHODOLOGY

To analyse the structure and content of a value creation process, the authors have used 2023 and 2024 annual or integrated reports of 5 global car brands – Mazda (Mazda, 2023), Nissan (Nissan, 2024), Suzuki (Suzuki, 2023), Saab (Saab, 2023), and Isuzu (Isuzu, 2023). The authors have chosen the reports of corporations from the automotive sector because, firstly, the value chains of car manufacturers are commonly the largest and involve many auxiliary activities. Secondly, these manufacturers comprehensively and transparently disclose information on their managerial processes. Each report contains a colourful flowchart supplemented by additional explanations on certain sections or elements in the text. The information from the flowcharts and the texts has been processed and modified in the form of tables containing the description of capital input, operations, and capital output in the case of Mazda and Nissan corporations; capital input, activities, product output, and capital outcomes in case of Suzuki; upstream, operations, and downstream in case of Saab; sources of competitiveness, upstream, operations, downstream, and aims to provide in case of Isuzu.

The authors have applied the following scientific methods to the examination: generalisation, classification, comparison, and inductive reasoning.

RESULTS AND DISCUSSION

As can be seen from Table 1, Mazda's value creation process is expressed in the form of 3 stages: capital inputs as initial resources; operations, which encompass all the pivotal activities aimed at creating new value; and outputs – outcomes achieved after the finished goods reach final customers. Mazda's management indicates 6 capital inputs: financial, manufactured, intellectual, human, social and relationship, and natural. All of them are measured in terms of widely known financial indicators. The operations performed comprise engineering and manufacturing, creating human connections, and nurturing the development of individuals. It is worth mentioning that the operations consist of typical manufacturing operations and activities for personnel development. The outputs are presented as a set of analytical figures, particularly net sales, an operating income ratio, ROE, greenhouse gas emissions, and the number of female managers. Thus, the description of Mazda's value creation process is based on frameworks of the classical value chain concept – it clearly separates the inflow of resources, the stage of processing these resources, and the achieved results.

Table 1. **Mazda's value-creation process**

Input		Operations	Output	
Capital	**Indicator**		**Category**	**Indicator**
Financial	Equity ratio: 44.2%	Engineering and manufacturing Creating human connections Nurturing the development of individuals	Financial indicators	Net sales (billion yen): 3,826.8
Manufactured	Capital expenditures: 94.1 billion yen			Operating income ratio (%): 3.7
Intellectual	Research and development costs: 128 billion yen			Return on equity (%): 10.4
Human	Average hours of training per employee: 46.5 hours per year			Break-even volume (1,000 units): 1,000 or less
Social and relationship	Number of suppliers: 1,059 companies		Non-financial indicators	Greenhouse gas emissions (1,000 t-CO2e): 31,389
Natural	Energy consumption: 11,707 TJ			Number of female managers: 65

Source: compiled and grouped by the authors, using Mazda's reports, 2023.

Nissan's value creation process is shown similarly to Mazda's process – Nissan's managers have divided it into 3 large steps, where inputs and outputs are described by using indicators (Table 2). The operations step slightly differs – operating activities are disclosed in the context of two strategic programs – the Green and Social Programs for 2030. Both programs emphasise implementing new technologies into production to minimise a detrimental impact on nature and create safer mobility solutions. Promoting resource quality management underlies the Green Program while solving social issues of communities underpins the Social Program.

Table 2. **Nissan's value-creation process**

Input	Operations		Output	
	Green Program 2030	**Social Program 2030**	**Category**	**Indicator**
Employee diversity Manufacturing capabilities Global footprint Diverse partnerships	Contribute towards carbon neutrality of vehicle lifecycle Advancing circular economy that maximises vehicle usage as well as efficient usage of resources Minimising impact on air quality through reduction of emissions Promoting water usage reduction and water quality management	Invest in new technologies to create safer and more personalised mobility solutions Establish human rights due diligence system in supply chain Contribute to empowering youth in communities Develop a highly skilled and motivated workforce	A balanced and competitive product portfolio	16 new electrified models Model mix of electrified vehicles - 60%
			Electrification and vehicle intelligence	Introduce next-gen autonomous drive technology
			New revenue streams	Revenue potential: 2.5T JPY Next-gen mobility services Energy ecosystem Life cycle management
			Strengthened each employees' skills and performance	
			Decarbonisation	CO2 reduction goal Life cycle: -30% per vehicle

Source: compiled and grouped by the authors, using Nissan's reports, 2024.

Like other corporations, Suzuki generates capital as an outcome of its activities and reinvests that capital in the next stage of business activities, thereby paving the way for future growth (Table 3). Suzuki's value creation process is shown as a chain consisting of 4 stages. In contrast to the previous two brands – Mazda and Nissan – Suzuki's management split the third stage into two types of outcomes: products and services outputs and capital outcomes (that is to say, finished goods and other resources generated).

Table 3. **Suzuki's value-creation process**

Capital inputs	Business activities	Product and service outputs	Capital outcomes
Financial (shareholder's equity) Intellectual (R&D expenses) Manufacturing (production sites) Human capital (production site; training expense) Social and relationship capital (supply chain) Natural capital (fossil fuels; water; raw materials)	Contribute to economic the development of emerging countries Provide economically and competitive quality-high products Provide indispensable mobility of means for local communities Contribute to environment through the smaller products	Automobiles: 3000 thousand units; net sales: ¥4,162.2 billion Motorcycles: 1859 thousand units; net sales: ¥333.2 billion Outboard motors: net sales: ¥134.6 billion Others: net sales: ¥11.8 billion	Financial (net sales and operating profit; ROE; total dividend) Intellectual (number of patents) Manufacturing (production units) Human (ration of female managers; % of male employees taking childcare leave) Social and relationship capital (countries and territories where Suzuki has No. 1 market share; local procurement ratio in India) Natural (CO2 emissions; waste)

Source: compiled and grouped by the authors, using Suzuki's reports, 2023.

Table 4 gives a basic overview of Saab's value chain, which shapes 3 large steps – upstream activities, operations, and downstream activities. Unlike reports of the previous four automotive brands, which outline goals, programs, or strategies to be implemented at each value creation stage, Saab's managers reveal only the exact activities performed. The upstream activities encompass indirect suppliers and direct suppliers. Their main features are a global footprint, an extensive supply chain, and procurement – procedures the main production cannot function without. Operations are characterised by the following features: operations in the major geographical segments, manufacturing of military equipment, governmental approval, product design, assembly, and a lead time – all processes from creating a product to delivering it to a customer. The downstream activities include sales, marketing, industrial cooperation, end-users, service, support, and end-of-life. Features of Saab's downstream operations: large contracts, a necessity for export control, governments as customers, large variations in the number of products delivered from year to year, fuel-consuming products, and long-term service.

Table 4. **Saab's value chain**

Upstream	Operations	Downstream
Indirect suppliers Direct suppliers *Features:* Global footprint Approx. 80% of direct suppliers based in Europe, U.S. and Canada Extensive supply chain Procurement of e.g. advanced sub-systems, components and equipment	*Features:* Largest operations in Sweden + four strategic countries (U.K., U.S., Germany and Australia) Development and production of military equipment is subject to government approval Product design of advanced products Manufacturing and assembly, system of systems' integrator Long lead times	Sales, marketing, and industrial cooperation End-user Service, support, and end-of-life *Features:* Sales offices in 30 countries Large contracts Export of defence equipment is subject to export control legislation Customers are governments Large variations in number of products delivered from year to year, small quantities Approx. 100 customer countries, with a majority of sales to Sweden, Europe and U.S. Energy and fuel-consuming products Sale of military equipment is subject to end-use agreements and export controls Long-term service and support commitment

Source: compiled and grouped by the authors, using Saab's reports, 2023.

By spurring innovation through developing next-generation products that help achieve carbon neutrality and evolving logistics, the Isuzu Group creates new value for its customers and for society. Isuzu's managers apply a broader approach to figure out its value creation process – they've told Isuzu's value creation story (Table 5). The value creation story is divided into 3 sections: sources of competitiveness, a value creation process, and aims to provide. The sources of competitiveness are similar to capital inputs of the other brands and reveal information on resources invested. The value creation process falls into 3 categories: upstream activities (planning products and establishing product quality); operations (manufacturing technologies and on-site capabilities); downstream activities (providing products and services to customers; after-sales support). The aim is to provide resemble capital outputs of the other brands and reveal data on outcomes, namely social and economic values achieved (ensuring secure, safe, and efficient transportation of people and goods; balancing the environment and economic development; net sales, ROE, operating income, dividends, etc.).

Table 5. **Isuzu's value-creation story**

Sources of competitiveness		Value-creation process	Aims to provide	
Source	**Indicators**		**Social value**	**Economic value**
Development capabilities	Establishment of development bases spanning Japan, the ASEAN region, Europe, the United States, and China Research and development expenditures - ¥119.0 billion	*Upstream:* Understanding customer needs and planning next-generation products Thoroughly establishing product quality *Operations:* Leveraging manufacturing technologies and on-site capabilities *Downstream:* Providing optimal products and services to our customers Providing after-sales support to maximise vehicle operation	Realising a society in which people and goods can be transported securely and efficiently Balancing the global environment and economic development Enhancing economic growth in emerging countries Sustaining lifestyles and the environment in emergency	Net sales: ¥3,195.5 billion ROE: 12.1% Operating income: ¥253.5 billion Dividends: ¥61.4 billion
Production capabilities	42 production bases in 30 countries Capital expenditures: ¥82.2 billion			
Sales and service capabilities	37 countries and regions in which Isuzu has no. 1 market share 3,740 service locations			
Human resources	23 hours of trainings programs per person			
Financial base	Capital adequacy ratio: 42.9% Shareholders' equity: ¥1,308.5 billion			
Environmental responsiveness	Promotion of overall business management based on ISO 14001 Achievement of net-zero emissions			

Source: compiled and grouped by the authors, using Isuzu's reports, 2023.

CONCLUSIONS

The conducted research enables us to understand to what extent value chains shown in annual reports of car manufacturers comply with theoretical provisions suggested by economists in scientific publications of various years. Having considered and compared the value chains of the five car brands, the authors discovered several peculiarities of a value creation process being inherent to the automotive industry.

1) The value creation process is divided into three stages: capital inputs, operations, and capital outputs. In turn, operations may be split into three components: upstream activities, operations, and downstream activities.

2) Capital inputs encompass the following types of resources: manufacturing, financial, human, intellectual, social, and natural ones.

3) Upstream activities comprise product planning, establishing connections with direct and indirect resource suppliers, procuring necessary equipment, components, and semi-finished goods, etc.

4) Operations usually include manufacturing, engineering, new technologies, designing, assembling, quality assurance, personnel development, legislative approval, minimising environmental impact, etc.

5) Downstream activities include sales, marketing, after-sales service and support, export control, etc.

6) Capital outputs shape manufacturing, financial, human, intellectual, social, and natural outcomes, i.e. resources to be consumed or invested in the new production cycle.

Thus, the automotive industry's value chains, like no other industry, can be an apt example of well-organised and consistent processes of creating added value from the stage of investing initial resources to the stage of consuming finished goods.

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