ICEB
The 3th International Conference On Economics And Business
ISBN. 978-623-96179-3-6
June 12, 2021 pp. 93-99

Identification of Changes in Digital Business Model for MSMEs Based on Dynamic Capabilities

Nungky Viana Feranita
Sekolah Tinggi Ilmu Administrasi Pembangunan
Jl. Lumba-lumba No. 9 Jember
+6281234700771
nungky_viana@stiapembangunanjember.ac.id

Siti Husnul Hotima
Sekolah Tinggi Ilmu Administrasi Pembangunan
Jl. Lumba-lumba No. 9 Jember
+6281235183372
husnul@stiapembangunanjember.ac.id

Denis Irawan
Sekolah Tinggi Ilmu Administrasi Pembangunan
Jl. Lumba-lumba No. 9 Jember
+6281216103220
denisirawan1998@gmail.com

ABSTRACT

This paper aims to identify and examine changes in business models as a response to a changing environment, especially how micro, small and medium enterprises or MSMEs can respond to digitalization. The topic is essential to talk about because the emergence of digital technology opens up new business opportunities and at the same time creates various challenges. This paper discusses changes in business models from the perspective of dynamic capabilities by showing how and under what conditions MSMEs succeed in developing and implementing digital business models. MSMEs need strong dynamic capabilities to respond to environmental dynamics.

Keywords : Changes in Business Models, Digital, Dynamic Capabilities, MSMEs.

1. INTRODUCTION

Social/physical distancing policy that was introduced by *World Health Organization* (WHO) in response to the spread of COVID-19 affects some sectors and businesses. This policy creates limitation that has a more severe impact on MSMEs than large enterprises, even though the contribution made by MSMEs to the economy in Indonesia is higher than large enterprises. Table 1 shows the development of data on MSMEs and large enterprises based on indicators of the number of business units, labor, Gross Domestic Product (GDP), and investment.

Table 1. Development of MSMEs and Large Enterprises (LEs) Data within 2017-2019

Indicator	Unit	2017		2018		2019	
		MSMEs	LEs	MSMEs	LEs	MSMEs	LEs
Business units	Unit	62,922,617.0	5,460.0	64,194,057.0	5,550.0	65,465,497.0	5,637.0
Labor	Person	116,431,224.0	3,828,953.0	116,978,631.0	3,619,507.0	119,562,843.0	3,805,829.0
GDP	Rp. Billion	5,445,564.4	4,058,584.3	5,721,148.1	4,274,157.9	7,034,146.7	5,275,758.1
Investment	Rp. Billion	1,586,688.5	1,317,928.8	1,675,139.6	1,376,591.6	1,716,750.0	1,450,208.0

Source: State Minister for Cooperatives Small and Medium Enterprises, 2021

In fact, MSMEs are the most vulnerable because they tend to have lower capital reserves, fewer assets, and lower levels of productivity than larger enterprises (OECD, 2020). Based on Law Number 20 2008, large enterprises have a higher net worth or annual sales proceeds than medium-sized enterprises.

MSMEs activities in Indonesia are also disrupted because they cannot operate normally that the demand and income decrease (Lutfi *et al.*, 2020). Covid-19 raises anxiety for MSMEs to survive that push them to change their business models by taking advantage of technological innovations.

To deal with the impact of the extreme events of the Covid-19 pandemic, MSMEs choose to have their businesses digitalised (Papadopoulos *et al.*, 2020). Digitalization has changed the way businesses are run so that they can become a new source of competitive advantage for companies (Guo *et al.*, 2020). MSMEs can gain a sustainable competitive advantage through digitalization if they have this type of resources. Therefore, MSMEs need to change their business model from conventional ones to digitalised business models (Witschel *et al.*, 2019). However, it is very difficult for MSMEs to build digital business models, especially during the Covid-19 pandemic.

To overcome this problem, Teece's (2009) dynamic capability theory can explain how MSMEs adjust their resources to maintain a constant competitive advantage. Teece's framework provides an ideal foundation for changing the digitalization-based MSMEs business model. Through sensing, seizing, and transforming identification of the resources and capabilities that are important for MSMEs to secure business sustainability in an uncertain time during Covid-19. This paper considers the external scope, namely digitalization that triggers changes in business models and assumes that changes in business models are the result of digitalization.

This paper discusses the need to find sources of dynamic capabilities that are contributive to changes in the digital business model of MSMEs. Previous papers related to the identification and preparation of the digital MSMEs digital

business model were still relatively limited. This paper aims to fill one of the relatively empty spaces, namely the MSMEs digital business model based on the perspective of dynamic capabilities. It is intended that the digitalization carried out by MSMEs can be sustainable.

2. LITERATURE REVIEW

2.1 Dynamic Capabilities

Strategic management in the business sector has developed through two main paradigms, namely Market-Based View (MBV) and Resource-Based View (RBV). The MBV concept is more outward-oriented, while the RBV concept is more company-oriented. Looking at the dynamics of the environment, new paradigms are starting to take shape such as dynamic capabilities theory (Sushil, 2015).

Because the market is dynamic, company resources also need to change over a period of time to match changing market conditions. This perspective is based on dynamic capabilities and is an outcome of the RBV. While RBV mainly concentrates on resource types and capabilities for strategic importance, dynamic capabilities concentrate on how these resources and capabilities need to be changed or updated over a period of time to maintain their relevance in a changing market (Madhani, 2009).

According to Teece (2009), dynamic capability is the company's ability to integrate, build, and reconfigure internal and external competencies to cope with rapid environmental changes. Teece (2009) proposes three dynamic capabilities needed for an organization to face new challenges: (1) organizations and their employees need the ability to learn quickly and to build strategic assets, (2) new strategic assets such as capabilities, technology, and customer feedback must be integrated within the company, and (3) existing strategic assets must be changed or reconfigured.

The MBV, RBV and dynamic capabilities perspectives all focus on different units of analysis and rates of change. Initially to overcome market forces, MBV was conceptualized, then the focus shifted to RBV. Finally, to respond to the challenges of the changing global world, the concept of dynamic capabilities has become popular. This transition is indicated by the direction of the arrow in Figure 1.

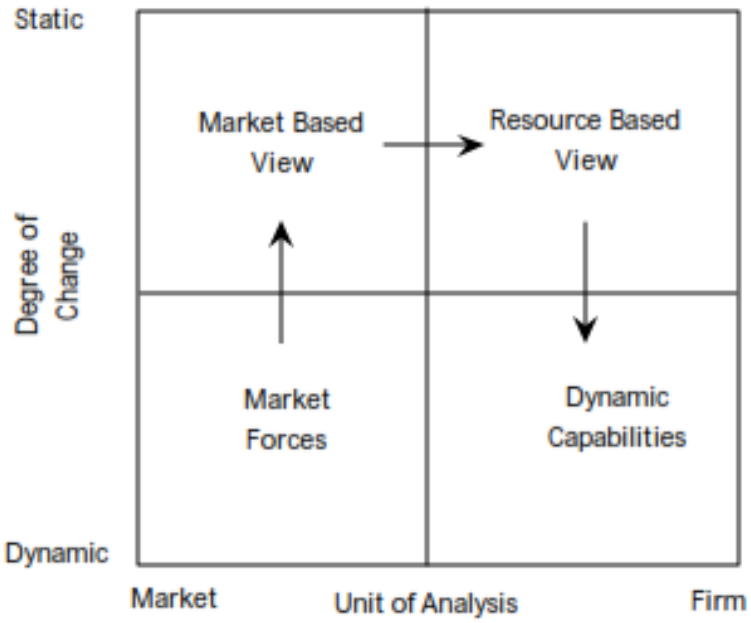

Figure 1. Characteristics of MBV, RBV, and Dynamic Capabilities
Source: Madhani (2009: 14)

This paper uses a dynamic capabilities approach and is based on Dynamic Capabilities Theory (Teece, 2009). The dynamic capabilities approach is very relevant today when the forces of global competition change the perspective of the industry. In this global environment, the means to achieve competitive advantage are changing rapidly. Thus, companies in this market need to have a strategy that is timely, a flexible infrastructure, and the ability to utilize resources and capabilities in a combined and innovative way (Teece et al., 1997).

2.2 Business Model Innovations

Afuah (2014) defines a business model as a framework for generating money, creating and seize value. Innovation is doing something differently from the norm. Hence, business model innovation is a framework for creating and capturing value by doing things differently.

There are five components in the business model according to Afuah (2014). First, the customer value proposition which is the company's value proposition to customers which consists of things the company can do for customers through its products to solve customer problems and / or satisfy customer needs better than competitors. Second, the

market segment which is a group of customers where a value proposition is offered or must be offered, how many customers are there in each group, their willingness to pay, and the attractiveness of each group. Third, the revenue model which is a component of how many customers are willing to pay for what product, when and how. Fourth, a growth model which is a component of what a company should do to increase the number of customers, increase willingness to pay, keep prices close to customer reservation prices while keeping costs low. Finally, capabilities which consist of resources and activities. Resources or assets are what the company owns or owns, while activities are what it does.

Sniukas (2020) states that there are three key features where business model innovation is considered a dynamic capability. First, the main concern of the dynamic capabilities concept is deliberate changes, including changes to the business model in order to remain competitive. Second, dynamic capabilities underlie interest in managerial activities and practices and organizations, for example, innovating their business models. Lastly, a static perspective on a business model is a holistic view of the resource base including all kinds of tangible and intangible resources and assets.

The emergence of the Internet of Things paradigm implies the use of new digital technologies to enable business enhancement such as creating new business models (Tesch, 2017). Different capabilities, resources and success factors are becoming increasingly digital and impacting entire business models across industries.

2.3 Digitalization

Digitalization is different from digitization (Schallmo & Williams, 2018). Digitization is an analog or physical artifact that allows digital technology to be implemented into business processes with the ultimate goal of acquiring new knowledge and creating new value for stakeholders. Meanwhile, digitalization is a fundamental change made to business operations and business models based on newly acquired knowledge through value added digitization initiatives.

Digitalization reflects the adoption of digital technology in business and society as well as related changes in the connectivity of individuals, organizations and objects (Urbach & Röglinger, 2019). The main driver of digitalization is digital technology. Digital technology is all technology for the manufacture, processing, transmission and use of digital goods. Based on advances in digital technology, digitalization has an impact on business and society. Digital technology enables innovative business models.

Changes in digital business models are related to elements of individual business models, overall business models, value-added chains, as well as different networks of actors in value-added networks (Schallmo & Williams, 2018). The rate of digital change is related to incremental and radical changes in business models. In changing digital business models, technology is used to produce new applications or services. The changing digital business model is based on an approach that includes a sequence of tasks and decisions that are related to one another in a logical and temporal context. The four target dimensions that are influenced by changes in digital business models are time, finance, space, and quality.

The digital business model framework consists of four different business models, each of which represents different capabilities and varying average financial performance (Weill & Woerner, 2018). First, suppliers who are also producers who sell through other companies. Second, multi-channel, which is an integrated value chain that creates a multi-product and multi-channel customer experience. Third, modular manufacturers who are providers of plug-and-play products or services. Finally, the ecosystem driver, which is the organizer of the ecosystem, a coordinated network between companies, devices and customers.

3. CHANGES IN THE DIGITAL BUSINESS MODEL BASED ON DYNAMIC CAPABILITIES

The discussion of this paper is related to the grand theory of strategic management that uses a dynamic capability approach (Teece, 2009). Strategy is an integral part of the business model. The business model is the configuration of activities, the organizational units that carry out these activities, the boundaries of where the organizational units are located, and the relationships between them (Foss & Saebi, 2015). In recent years there has been an increasingly dynamic approach to changing business models (Demil & Lecocq, 2010). Business model change is defined as a process where management actively changes the system of intra-organizational and / or extra-organizational activities as well as business model relationships in response to changing environmental conditions (Foss & Saebi, 2015). There are four categories in changing the business model: (1) Reactivating, namely changing the series of activities carried out by the company; (2) Relinking, namely changing the relationship between activities; (3) Repartitioning, namely changing the boundaries of the company's focus; and (4) Relocating, namely changing the location (physical, cultural, and institutional) between organizational units that carry out activities. Table 2 shows the typology of business model changes.

Table 2. Typology of Business Model Change

Classification	Type	What Changes
Reactivating	Add	A collection of company business model activities by appending
	Remove	A collection of company business model activities by deleting
Relinking	Re-arrange	Governance of transactions between markets, hierarchies and hybrids
	Re-order	The order in which organizational units perform activities
Repartitioning	*Insourcing* / *outsourcing*	The location of the organizational unit moves from outside within the company or from inside to outside the company
	Re-assign	The location of the organizational unit moves from one unit to another within the company
Relocating	*Off-shoring*	The geographic location of the organizational unit from inside to outside the company's home country to foreign countries
	On-shoring	The geographic location of the organizational unit from the activity unit of the foreign country to the country of origin

Source: Foss & Saebi (2015)

In the context of digitalization, a large number of new business opportunities have emerged and at the same time create various challenges that threaten established business models. Digitalization has the potential to help MSMEs respond to the crisis caused by Covid-19 effectively by activating their dynamic capabilities (Vial, 2019). Digitalization refers to the use of digital technologies such as information, computing, communication and connection technologies to drive organizational change (Vial, 2019; Bharadwaj *et al.*, 2013; Sebastian *et al.*, 2017).

Many studies have shown that the adoption of digital technology plays an important role in responding to the crisis during the Covid-19 pandemic. Lutfi *et al.* (2020) examined social distancing policies on 587 SMEs in Indonesia using quantitative methods with a survey design. The results showed that the income and demand for SMEs products decreased, there were even SMEs that did not have income so that SMEs took advantage of information technology to overcome them. Papadopoulos *et al.* (2020) discusses the use of digital technology by SMEs during Covid-19. The implication is that SMEs need to establish policies for data collection, sharing and analysis. SMEs must provide the right systems and support staff to ensure that the infrastructure is always available, ensuring the smooth operation of all business operations (in the digital SMEs platform used). Guo *et al.* (2020) examined the digialtization of SMEs and the public crisis response in 518 SMEs in China. Data were analyzed using descriptive and correlation methods. As a result, digitalization has enabled SMEs to respond to public crises effectively by leveraging their dynamic capabilities. In addition, digitalization can help improve the performance of SMEs. Hulla & Ramsauer (2020) examines the challenges faced by SMEs in the digital business environment. By using a literature study, there are five competencies needed by SMEs, namely competence in Information and Communication Technology, personal flexibility, creativity, ability in collaboration and organization, and the process of understanding in networks.

Several researchers have studied the role of digitalization from a Resource Based View (RBV) point of view. RBV argues that organizational resources can be physical, human, or organizational resources that are valuable, scarce, inimitable, and irreplaceable (Barney, 1991). However, given the technological changes driven by digitalization in an environment with high volatility, this paper uses a dynamic capabilities-based view. Witschel *et al.* (2019) argued that the existence of dynamic capabilities has an influence that determines how companies can successfully change in dynamic times. From this point of view, dynamic capabilities provide a perspective to explain the success of different companies in digitalization.

Dynamic capabilities include entrepreneurial activities, processes, and leadership skills where (1) the need to change existing business models is recognized, and (2) the necessary assets are accessed and organized in pursuit of new value creation. The dynamic capabilities also guide choices on how to secure the required services from assets that are currently lost. Dynamic capabilities define a company's flexibility in implementing new organizational designs, including the alignment of new and existing activities and the response to the unexpected internal and external possibilities that accompany the adoption of a new business model. In short, dynamic capabilities allow companies to identify and organize the resources needed to design and implement business models. If a business model is used in conjunction with a good strategy, it will be associated with a high level of sustainable profit (Teece, 2009).

Dynamic capability has three main elements, namely sensing, seizing and transforming (Teece, 2009). Sensing is an activity to identify what is happening in the environment, which is then translated into routine activities (seizing), so that the organization is able to change or transform to adapt to these new conditions (transforming). Each of the three elements relates to innovation, development, and implementation of the business model. Table 3 shows the elements of dynamic capabilities.

Table 3. Elements of Dynamic Capabilities

Main Element	Description	Micro Element
Sensing	Capability to identify opportunities and challenges in an environmental context	1. Activities that lead to research and development.
		2. Process for engaging suppliers in the innovation process.
		3. Process for directing the development of science and technology by involving external parties.
		4. Process for identifying market segments, making changes to customer needs, and customer innovation.
Seizing	Capability to seize, seize, or take advantage of opportunities	1. Offer new solutions and business models to customers.
		2. Determination of the scope of activities in conducting innovation.
		3. Development of routines for priority selection in decision making.
		4. Routines to build loyalty and commitment.
Transforming	Capability to manage the challenges of environmental change by making adjustments and transformations	1. Decentralization and decomposition.
		2. Use of resources for several different purposes and provide added value.
		3. Knowledge management and governance.

Source: Priyono *et al.* (2018)

4. CONCEPTUAL FRAMEWORK

MSMEs have become one of the main concerns in our study. We have done preliminary research on MSMEs in the context of innovation and performance.

The results of research by Feranita *et al.* (2017a) show that technology capabilities and industrial competitive strength have an effect on SMEs innovation. Innovation is quite capable of being a mediation that influences technology capabilities and industrial competitive strength on the performance of SMEs (Feranita *et al.*, 2017b).

Feranita (2018) conducted a literature study to explore issues related to the importance of technological innovation for MSMEs in the form of e-commerce adoption in the face of the 4.0 industrial revolution. This paper anticipates that human resources and the level of infrastructure readiness will support MSMEs technological innovation.

Feranita *et al.* (2019) argue that government support affects the innovation and performance of SMEs, both directly and indirectly. In addition, transformational leadership is more important for improving the performance of SMEs in Indonesia than transactional leadership (Feranita *et al.*, 2020).

In relation to previous studies, we intend this paper to continue, explore, and contribute to MSMEs through a dynamic capability-based digital business model. The conceptual framework in this paper is as follows.

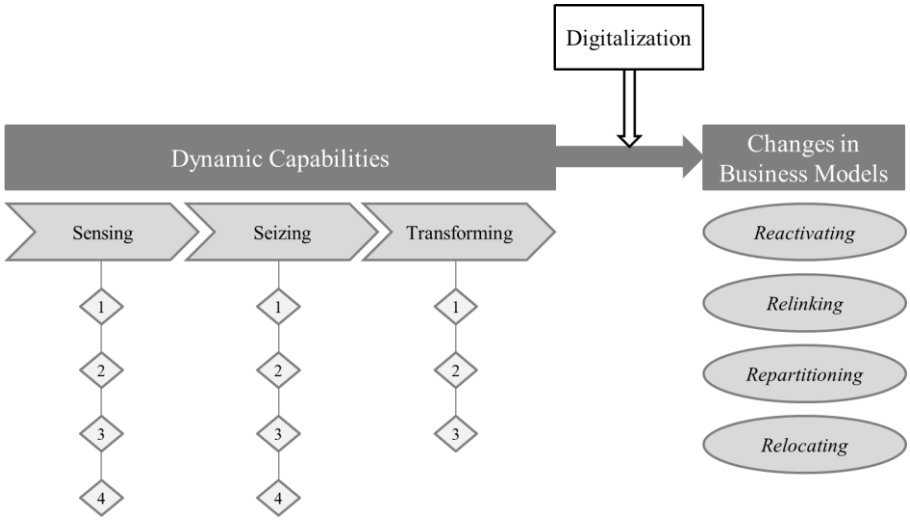

Figure 2. Conceptual Framework

5. CONCLUSIONS

In this paper, we discuss the use of digital technology in changing business models to secure business continuity in an uncertain environment, such as Covid-19. Dynamic capabilities consist of sensing, seizing, and transforming elements that are essential for MSMEs. There are four typologies of business model change, namely reactivating, relinking, repartitioning, and relocating. Further research is needed to find the critical pieces of dynamic capabilities for changing MSMEs digital business models. In addition, we hope that further research will explore more changes in digital business models based on dynamic capabilities that are optimal for MSMEs.

6. REFERENCES

Afuah, A. (2014). *Business Model Innovation: Concepts, Analysis, and Cases*. New York: Routledge.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1): 99-120.

Bharadwaj, A., El Sawy, O. A., & Pavlou, P. A. (2013). Digital business strategy: toward a next generation of insights. *MIS Quarterly*, *37*(2): 471-482.

Demil, B. & Lecocq, X. (2010). Business model evolution: in search of dynamic consistency. *Long Range Planning*, *43*(2-3): 227-246.

Feranita, N. V., Gumanti, T. A., Wahyudi, E., & Puspitaningtyas, Z. (2017a). Determinants of innovation in small and medium enterprises in Jember, East Java, Indonesia. *International Journal of Management and Administrative Sciences*, *4*(10): 15-23.

Feranita, N. V., Gumanti, T. A., Wahyudi, E., & Puspitaningtyas, Z. (2017b). The mediating effect of innovation on the relationship of leadership, technological capabilities, learning, industry competitive forces and the performance of small and medium enterprises. *International Business Management*, *11*(7): 1532-1539.

Feranita, N. V. (2018). Technological innovation as a key strategy for micro, small and medium enterprises. *Proceedings of the 2nd International Conference on Economics and Business (ICEB)*, Jember, 31-38.

Feranita, N. V., Nugraha, A., & Sukoco, S. A. (2019). The role of government support for innovation and performance of SMEs. *Jurnal Politico*, *19*(2): 124-136.

Feranita, N. V., Nugraha, A., & Sukoco, S. A. (2020). Effect of transformational and transactional leadership on SMEs in Indonesia. *Problems and Perspectives in Management*, *18*(3): 415-425.

Foss, N. J. dan Saebi, T. (2015). *Business Model Innovation: The Organizational Dimension*. United Kingdom: Oxford University Press.

Guo, H., Yang, Z., Huang, R., & Guo, A. (2020). The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Frontiers of Business Research in China*, *14*: 1-25.

Hulla, M. & Ramsauer, C. (2020). Competencies of production in SMEs in assembly industries in a digital, volatile business environment. *Technical Journal*, *14*(3): 388-395.

Lutfi, M., Buntuang, P. C. D., Kornelius, Y., Erdiyansyah, & Hasanuddin, B. (2020). The impact of social distancing policy on small and medium-sized enterprises (SMEs) in Indonesia. *Problems and Perspectives in Management*, *18*(3): 492-503.

Madhani, P. M. (2009). Resource based view (RBV) of competitive advantage: an overview. *Indian Management Research Journal*, *1*(2): 3-22.

OECD. (2020). *Coronavirus (COVID-19): SME Policy Responses*.

Papadopoulos, T., Baltas, K. N., & Balta, M. E. (2020). The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice. *International Journal of Information Management*, *55*: 1-4.

Priyono, A., Nursyamsiah, S., & Darmawan, B. A. (2018). Identifikasi elemen-elemen mikro kapabilitas dinamis sensing untuk pengembangan inovasi di Usaha Kecil dan Menengah industri kreatif. *Jurnal Siasat Bisnis*, *22*(1): 92-109.

Schallmo, D. R. A. & Williams, C. A. (2018). *Digital Transformation Now! Guiding the Successful Digitalization of Your Business Model*. Switzerland: Springer.

Sebastian, I., Ross, J., Beath, C., Mocker, M., Moloney, K., & Fonstad, N. (2017). How big old companies navigate digital transformation. *MIS Quarterly*, *16*(3): 197-213.

Sniukas, M. (2020). *Business Model Innovation as a Dynamic Capability: Micro-Foundations and Case Studies*. Switzerland: Springer.

Sushil. (2015). Strategic Flexibility: The evolving paradigm of strategic management. *Global Journal of Flexible Systems Management*, *16*(2): 113-114.

Teece, D. J. (2009). *Dynamic Capabilities and Strategic Management*. New York: Oxford University Press.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7): 509-533.

Tesch, J. F. (2017). *Business Model Innovation in the Era of the Internet of Things: Studies on the Aspects of Evaluation, Decision Making and Tooling*. Switzerland: Springer.

Urbach, N. & Röglinger, M. (2019). *Digitalization Cases: How Organizations Rethink Their Business for the Digital Age*. Switzerland: Springer.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, *28*(2): 118-144.

Weill, P. & Woerner, S. L. (2018). *What's Your Digital Business Model? Six Questions to Help You Build the Next-Generation Enterprise*. Boston, Massachusetts: Harvard Business Review Press.

Witschel, D., Döhla, A., Kaiser, M., Voigt, K. I., & Pfletschinger, T. (2019). *Journal of Business Economics*, *89*: 1023-1095.