# Exploring resource exchange

## Active model approach

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**Abstract**

The exchange of resources has been a vital part of human lives for a long time and the mechanisms with in it have been intriguing mankind, therefore the logic behind the relevant decisions needed to be understood. The first objective was to study different resource exchange theories and how they can be applied for the active resource exchange. The second objective was to create a model which would describe the active exchange of resources.

Research was conducted mainly following the principles of grounded theory and supported by integrative literature review. After database searches and screening, 15 resource exchange theories were selected for empirical study, which were divided into two main categories: the Firm Perspective and the Individual Perspective. From the selected material the characteristics of the theories were analyzed in order to create a view of the existing findings.

The results helped in creating an active resource exchange model (AREM), which can provide a useful learning tool for recognizing notable influencing factors at information gathering and preparations for strategic planning. AREM can be seen as a map for exploring the different and new aspects of resource exchange. The findings also generated a structure for active resource exchange situations on a more general level.

**Keywords/tags (subjects)**

Active resource exchange model, AREM, Strategy, Planning, Resources

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**Tiivistelmä**

Resurssien vaihto on ollut olennainen osa elämää jo pitkään. Sen mekanismien kiehtoessa ihmiskuntaa, on syntynyt tarve ymmärtää siihen liittyvien relevanttien päätösten taustalla olevaa logiikkaa. Tässä tutkimuksessa tarkasteltiin erilaisia resurssien vaihdon teorioita ja niiden soveltamista aktiiviseen resurssien vaihtoon ja luotiin malli, joka kuvaa aktiivisen resurssien vaihdon ilmiötä.

Tutkimus toteutettiin pääasiassa noudattaen ankkuroitu teoria (Grounded theory) -menetelmän periaatteita, joita tuettiin integratiivisella kirjallisuuskatsauksella. Tietokantahakujen ja aineiston seulonnan jälkeen valittiin 15 resurssien vaihdon teoriaa empiiristä tarkastelua varten, teoriat jaettiin kahteen pääkategoriaan: yritysnäkökulma ja yksilönäkökulma. Aineistosta analysoitiin vertailemalla teorioiden ominaisuuksia, jotta voitiin muodostaa käsitys olemassa olevista löydöksistä.

Tutkimuksessa kehitettiin aktiivisen resurssien vaihdon malli (AREM), joka voi toimia hyödyllisenä välineenä merkittävien vaikuttavien tekijöiden tunnistamiseksi tiedonhankinnassa ja tukena strategisen suunnittelun valmistelussa. AREM voidaan nähdä karttana, joka mahdollistaa resurssien vaihdon erilaiset ja uudet näkökulmat. Löydökset tuottivat myös rakenteen aktiivisille resurssien vaihtotilanteille yleisellä tasolla.

**Avainsanat (asiasanat)**

Active resource exchange model, AREM, Strategy, Planning, Resources

**Muut tiedot (salassa pidettävät liitteet)**

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# 1 Introduction

“Exchange of goods in the market is *motivated* by mutual *need* and *regulated* by the relative "*value*", the ability to satisfy want, of the skills applied to the production of the goods to be exchanged” (Soudek, 1952, p. 45).

This quote from Soudek’s article about *Aristotle's theory of exchange* is a reminder that the topic of this study itself has been triggering scientists over 2000 years yet there is still to discover. This study presents a theoretical model to interpret the exchange of resources phenomena recognized in work life when comprehending was needing wider perspective.

The aim is to answer questions about why and how from several angles in the field of resource exchange. In here, real life is seen as an environment of multiple unknown variables. Study aims to present and align a model for understanding the functions of how and why plans made are not reaching the wanted goal. And at which stages can these influencing variables alter the outcome. Model helps to understand the logic behind resource exchange. That helps to process the information received along with the process on resource conscious thinking and adapt our mindset for future decision making. Unpredictability of resource exchange is derived not only from the operational environment (external), but also from actors’ mental variables in the situation (internal). The model created and presented in this study can be applied on multiple functions for generating new ideas or used as a “reason translator” for the logic behind action. The model helps to understand and structure the general variables for the decision processes by helping to define and model the base how they are interconnected. When influencing factors are understood, it is easier to understand how to use existing resources more efficiently or how to turn the exchange into our power.

My personal profession as Sales and Marketing Director formed a natural context for the study. During the launch of a new product series, there was a need for understanding how to communicate the benefits of a unique product and its value adding attributes. Competitive products and methods were very different, and the focus needed to be changed from the product value in exchange to the value it creates in the whole chain of resource exchanges in the future. It had to be done so that the potential clientele could understand the true total value of it. (Eggert et al., 2018). To be able to understand and communicate true value, first it needs to be understood what

factors are influencing the value creation and what are the most appreciated factors for decision making, to be more favorable for the product. By observing different situations and reasoning the actions, a sketch of a model was made to describe the phenomena in general. Starting from resources with their accelerators and how they create capability, which transforms to performance and finally to value. This work life-originated model has been slowly modified and improved in the last years to explain what factors affect the result and how they relate to each other. As Grönroos and Voima (2018) has described value-in-use and value co-creation, the value is not created only when possession of the resource is exchanged. At the moment of exchange there is only capability, but the valuation can reach to the fact of how it finally performs in action. The model has been very helpful when trying to understand the reasoning behind the decision process and how to prepare for different situations. When model reached the phase that it was usable to explain different real-life scenarios, research was needed to find out how it differs from existing theories and why. This study describes and defines related exchange theories, and how they can be applied for resource exchange valuation in use or in action. Aim is especially to recognize and describe exchange of resources and its elements, in wider perspective as well as to enhance this knowledge when designing actions for beneficial resource exchange. For this purpose, a work life derived general model is formed to be utilized in scrutinizing different levels, cases and transactions of resource exchange. Life can be seen as a sequence of decisions for different level events to exchange resources.

Framing the precise topic of the study was very difficult, because the phenomena of resource exchange itself is very wide. It was quite hard to understand the relevant causalities in order to decide which elements should be left out or keep. Finally, after several work life-related endeavors it crystallized into study of the process of resource exchanges and the affecting factors around it. Further development requires some interdisciplinary approach (Lichbach, 2003) to be able to connect different factors to develop the *active resource exchange model*. To proceed, the following questions need answers:

a) What resource exchange happens between interpersonal resource exchanges?
b) How can resource consumption in action be described in current exchange theories?
c) Can active resource exchange describe the exchanges at multiple levels?

# 2 Methodology

To understand methodological choices of this study some background and contextual information is presented before actual methodological issues. There was time restrained to do this research, which ruled out the quantitative methods and led to qualitative options without interviews. The challenge with the time was that the chosen research topic did not have a specific search terminology to explain the phenomena or assumed terms gave results for off topic. For this research, rules for rejecting or accepting by research terms were not an option, because material needed some screening and ethnographic content analysis for its relatability by field of study, headline and content (Ngulube, 2015). Reliability of the theories was not an issue, because used literature is well acknowledged or peer reviewed scientific journal articles. Therefore, systematic search was always not very systematic, instead it was forced to find side hits from topics of resource exchange, which started to guide closer to the researched core. This research is not aiming for the meta-analysis of reviewed theories, but rather giving some researched academic support for the new ideas presented for future researchers. This research by its all elements complies with the guidelines of research integrity set by TENK (Finnish National Board on Research Integrity TENK, 2023).

This research is conducted mainly following the principles of grounded theory and supported by integrative literature review with research integrity.
“The integrative literature review is a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated” (Torraco, 2005, p. 356).

Integrative literature review identifies pre-existing theories, for searching the connections from them to form a new model for the research topic (Snyder, 2019). Snyder points out the potential of integrative review “An integrative review method should result in the advancement of knowledge and theoretical frameworks, rather than in a simply overview or description of a research area” (Snyder, 2019, p. 336). Grounded theory method allowed the new model to mature and develop before and during the literature review (El Hussein et. al., 2017).

It was found in the very early stage of the study that selected topic theme seems to be difficult to test and analyze even for the most advanced researcher, even though some reviewed theories

have been tested and new methods have been applied to widen the testability. (Bristow & Mowen, 1998; Hechter et.al., 1993; Sabbagh, & Levy, 2012; Williamson, 1999).

In this type of research, it must be acknowledged that there is a risk for a subjective favoring of the articles, which support the researcher's view. In this work risk control is done by presenting the most significant theories of the field as they are and the differences to the research's groundings will be seen in results or opinions are clearly pointed out. Resource exchange phenomena can be explained by model in *a post hoc*, but useful *a priori* prediction is harder to make due to the overwhelming amount of subjective or operational environmental variables (Cropanzano et.al., 2017). Model can still provide a useful learning tool for notable influencing factors at information gathering and preparations for strategic planning.

## 2.1 Data collection

Data collecting started with the observations of customer organization purchase, validation and use processes as well as reflecting the news related to the war in Ukraine. It continued as conversations with the stakeholders and internal meetings at work. The created model was used as a core for creating marketing communication tools and feedback was collected at fairs and other events. Observations and "commercial field-testing" were shaping the model to the current state. Next stage was to do the academic part and start identifying the key elements and terms for the phenomena.

Resource exchange, capability and valuation have been researched before from multiple perspectives (Google Scholar, 2024a; Google Scholar, 2024b; Google Scholar, 2024c). To find suitable and relevant literature for the study, several database searches were done in Autumn 2024. The challenge with the available databases was the lack of studies of resource exchange and valuation in the researched context, or most of them were old (Cropanzano & Mitchell, 2005). It's notable that literature revealed that some researchers have noted the challenges, partly for the same reason, difficulties seem to be in area, where unknown variables are hard to control or predict. E., Hechter et.al., (1993, p. 0) commented "despite their undeniable theoretical centrality, values are perhaps the greatest black box in all behavioral science". Data collecting challenge was increased by the unavailability of the full articles with the licenses provided by the school as well as personal time limit. Another challenge was to find the right search terms, because "resource" and "exchange"

can be used in many contexts and meanings. When concentrating more on wording as “resources-based” or “social exchange” the searches narrowed closer to intended topics. The most logical system was to find the relevant main theories and continue by following the theory development and applications from the content references.

Artificial intelligence (AI) was utilized at this work, by very light manner. ChatGPT was used to speed up the search process for possible terms, related theories or their history, by searching with sentences like “who was the founder of the social exchange theory”. This way it was possible to find the theories efficiently for further examination and receive the information from true sources. Scispace AI-tool was also tested for finding the correct search terms or theories, but after screening content analysis it was not found that useful and searches were concentrated on more efficient methods. This complies with the guidelines set by The Rectors’ Conference of Finnish Universities of Applied Sciences Arene (Arene, 2024).

*Table 1. Data collection methods and results in number of findings.*

| **Data collection methods:** | | |
|---|---|---|
| For the ***engine*** searches, following **databases were used:** | **related articles found for analysis** | **used** |
| Janet/Finna | 4 | 2 |
| Ebsco | 9 | 5 |
| Research gate | 5 | 3 |
| Jstor | 25 | 15 |
| Google Scholar | 27 | 23 |
| ***Manual search*** included following methods: | | |
| Books | 25 | 22 |
| Reference search from the relevant texts. | results used with database search | |
| Reference list search from found articles. | results used with database search | |
| Browser search | results used with database search | |
| AI-search with ChatGPT and Scispace | results used with database search | |

Database and browser searches were done with the same keywords and results were articles and books. Some editorial books had chapters with different writers and topics, which was helping to give an overall picture of some theory groups.

*Key words:* resource exchange, resource theory, resource exchange theory, research exchange val-

uation, capability, action variables, performance, goal, decision making, information, communication, valuation, operating environment, external influence, socio-cultural resource exchange, policy makers, public opinion, subjective valuation, social exchange, strategy, motivation.

Search results finally guided to two suitable theory lines, that generated a chain of theories and models around the phenomena, so it was natural to concentrate on those. When finding the relevant frameworks or theories by above mentioned search methods, there was a preliminary selection process to accept or deny for the next phase. Accepted ones were collected to an Excel spreadsheet to create a general overview of their definitions and possible relations to others (23 theories). This method helped the study to form slowly but steadily some logical structure for selection and organizing.

The third selection was made through the literature review, where some versions of the same theory were combined under the same head title, or they were not considered, because original document was not available. Eventually all the main contributing theory documents were available, so that 2nd level quotations were to the minimum and credibility was saved. Finally, there were two main categories *Firm perspective* and *Individual perspective* with 15 theories, divided into seven theory groups with ground theory or greatest contributors' name and publishing year.

*Table 2. Worksheet for organizing relevant theories, by different approaches. Figure 1 on page 10 shows the structure of the research process, where table 2 is presented at 3rd screening.*

| RESOURCE EXCHANGE RELATED FRAMEWORKS AND THEORIES | | |
|---|---|---|
| **Firm perspective** | **who** | **when** |
| Resource based view (RBV) | Edith Penrose and Jay Barney | 1950 |
| Resource based theory (RBT) | Jay Barney | 1991 |
| Knoledge-based view (KBV) | Grant | 1996 |
| Dynamic capabilities approach (DCA) | David Teece, Gary Pisano, and Amy Shuen | 1997 |
| Competence-based theory (CBT) | Hamel G., Prahalad C. K. | 1994 |
| **individual perspective** | **who** | **when** |
| Rational choice theory | Adam Smith | 1776 |
| Marginal utility theory | William Stanley Jevons | 1862 |
| Subjective theory of value (STV) | Carl Menger | 1871 |
| Social exchange theory (SET) | George C. Homans | 1958 |
| Equity theory | John Stacey Adams | 1965 |
| Resource Theory of Social Exchange (RTS) | Foa&Foa | 1971 |
| Consumer resource exchange model (CREM) | Dennis N. Bristow and John C. Mowen | 1998 |
| Reciprocity Theory | Alvin W Gouldner | 1960 |
| Conservation of resources theory (COR) | Stevan E. Hobfoll | 1989 |
| Theory of Selective Optimization with Compensation (SOC) | Paul B. Baltes and Margret M. Baltes | 1990 |

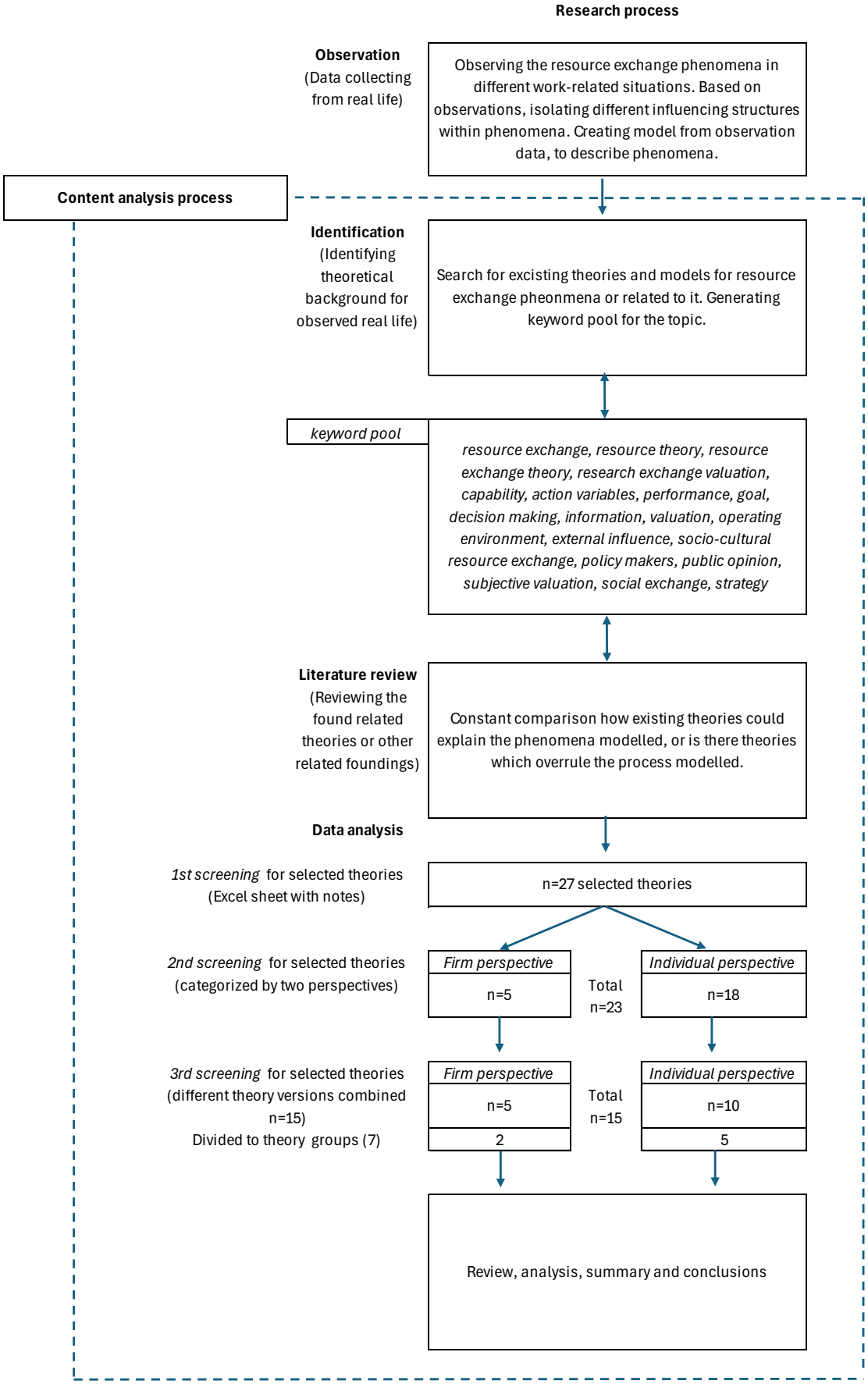


*Figure 1. Research process and content analysis process.*

## 2.2 Data analysis, verification of findings and ethics

From the selected material the characteristics of the theories were analyzed. This material showed that the selected perspectives (firm and individual) are concentrating on very different things. In firm perspective the main concern is the resources utilizing for better competitiveness. Individual perspective theories the main focus was on people and what resource exchange is to them. On the other hand, firm perspective theories acknowledge the human/ knowledge resources and therefore some of the decision making is influenced by the findings from the individual perspective. Some of the individual perspective theories are researched in the workplace or group dynamic environment, so they can give more background info for the firm how human resources might be functioning and therefore give the competitive edge.

Firm perspective theories can also be described as strategic theories to guide new ideas for better competitiveness. Firm perspective theories are handling the resources as assets, which can be utilized for sustainable competitive advantage for the firm's best interest. (Wernerfelt, 1984). These theories have had some critique, because all of them are not giving more specific instructions on how resources should be organized to reach such a stage (Priem & Butler, 2001). This review did see the problem if thought as a theory, instead they give the view/ idea or a platform of sustained competitive advantage, which can be hidden in right use of right resources. Every firm, industry and circumstances differ so much by what kind of resources would give that advantage that every firm needs to figure that out from their own perspective. This requires resource exchange and understanding the chain of value for each of them.

Individual perspectives are concentrating on a mixture of psychological, social psychological and behavioral views. These theories explain motivations, valuations and transactional reasoning at the resource exchange. Some of the theories are studying why and how exchange is done in relationships and how it affects it, but they also bring up the view how it can be transferred to person-to-person trades in general. Theories have their own nuances, and even selected ones are divided into five different families, the ideas could be chained, since they are approaching the resource exchange from different perspective. They could be organized differently if the comparison point is changed, as with all psychology-based theories, they could be classified on any human involved groups, especially in firms.

Research integrity is based on: “reliability, honesty, respect and accountability“ (ALLEA, 2023, p. 5). In this research ethicality was taken into consideration in many aspects. One of them was correct citation by using APA 7th edition ruling for citation and references. The use of AI was limited to tasks as “who is considered as the founder of theory xxx”, this way correct source was fast to find, but the misconduct of the use was avoided. There were no interviewed people or classified documents in use, so data handling, data storage or anomality was no endanger nor a concern. The research method was a hybrid from two approaches and the validating model by comparing existing theories was challenging, because modelled approach was rising a new perspective. On the other hand, by extending the concepts from reviewed theories, parts of the mechanisms found support.

# 3 Literature Review

In this chapter we will go through theoretical background and previous research of the topic related to resource exchange phenomena. This will give a general understanding of how theories are described, and from which angle the approach is made. Resource exchange is involved with many different fields of study and some subcategories under them: Psychology, social psychology, cognitive psychology, sociology, behavioral sciences, anthropology and economics, to mention a few. Theories can provide some tested research information about what is needed for resource exchange to happen and what effecting factors are on actual exchange valuation. It was surprising that resource exchange theories are not more popular among the research community. Can it be because of their complexity to control the variables in scientific meaning? As Arend (2006) noted about the resource-based view theory’s testing for benefits “adequacy of testing has not improved over the last 10 years. If empirical testing does not alter its approach, the RBV will be in increasing jeopardy”(p. 409).

Theories in this review show an overview of the development and how they complement each other from different perspectives. Different resource exchange theories were categorized *in this study* for two main views: ***firm perspective*** and ***individual perspective*** (table 2). All the studied theories will fit under these categories with their own perspective for the theme and they are organized by category for better understanding of their purpose. Recap, at the end of the chapter, presents the main takeaways from theories’ findings.

## 3.1 Firm perspective

A common factor for the theories with *firm perspective* is that they see resources as firm assets for creating competitive advantage. All five theories classified into this category work as strategic planning tools for management to maintain or improve the position gained.

### 3.1.1 Resource based view (RBV)

Groundwork for *resource-based view (RBV)* was originally made by Penrose in the 1950s at her book: *The theory of the growth of the firm* (*TGF*). Main redevelopment to today's RBV was done by Wernerfelt 1984 and Barney in the 1990s. The core concept in (RBV) is that the company has internal resources, which can be used to achieve competitive advantage and that would lead to successful business. Resources in TGF are defined as follows "few heads—for example, *land*, *labour* and *capital*—but pointing out that the sub-division of resources may proceed as far as is useful, and according to whatever principles are most applicable for the problem in hand" (Penrose, 2009, p. 66).

Wernerfelt (1984, p. 172) described resources as follows: "By a resource is meant anything which could be thought of as a strength or weakness of a given firm." There are tangible and intangible resources as: "brand names, in-house knowledge of technology, employment of skilled personnel, trade contacts, machinery, efficient procedures, capital, etc." Wernerfelt (1984, p. 172). Wernerfelt wanted to turn the focus even further away from the company's products to its resources. With this point of view, he was able to create different strategic thinking for resource position barriers for gaining and keeping competitive advantage. Mahoney and Pandian (1990) p. 28, suggested an additional integration to the RBV, "the organizational economics approach, (Teece et al., 1990), in which heterogeneity is explained as an outcome of a disequilibrium process of Schumpeterian competition (Iwai, 1984), path dependencies (Arthur, 1989) , commitments and complementary assets (Grant, 1990)". This approach would make it possible to view time as a fourth dimension of resources. RBV has faced its critics as every theory or theory to be, that is the academic test bench to improve the existing. As Truijens, (2003) said in his article "Though certainly these scholars appear to be biased to discussing the RBV's shortcomings and weaknesses, the mere fact that they spend attention and precious journal space indicates that the RBV is taken seriously, at the very least as a would-be theory" (p. 11).

### 3.1.2 Resource-based theory (RBT)

RBT is an evolution version of previous RBV, with some new features and views. Barney found during his research that firms need frameworks to help to identify the internal strengths and weaknesses by resources. This way resources can be used to establish a truthful strategy for sustaining competitive advantage to perform. General definitions of valuable resources at the RBT are physical, financial, human and organizational. They are also referred to as firm's capital, that describes their nature of value creation in appreciation and depreciation. With internal analysis of strengths and weaknesses, there also must be external analysis of opportunities and threats. The first step is to identify perfectly homogeneous and mobile competitive advantages. Next will be examination of the heterogeneous and immobile competitive advantages (normally the resources for competitive advantages are found from there). From these resources valuable ones should be found and nurtured by conceiving and implementing strategies. Framework for identifying the sustained competitive advantage resources is called VRIO. It expresses the four key parameters: ***V****alue*, ***R****areness*, ***I****mperfect imitability* (history depend, causal ambiguity, social complexity), ***O****rganization* (Barney & Hesterly, 2020).


*Figure 2. The relationship between resource heterogeneity and immobility, value, rareness, imperfect imitability, and organization, and sustained competitive advantage.* (Barney & Clark, 2007, p. 71).

### 3.1.3 Dynamic capability approach (DCA)

Dynamic capabilities approach is completing the RBT by aiming to research how sustainable competitive advantages can be preserved by environmental change (Teece, 2007). Definition for Dynamic capability is: "A dynamic capability is the capacity of an organization to purposefully create, extend, or modify its resource base" (Helfat et al., 2007, p. 4). The "resource base" as Helfat et.al., 2007) describe: "includes the tangible, intangible, and human assets (or resources) as well as capabilities which the organization owns, controls, or has access to on a preferential basis" (Helfat et

al., 2007, p. 4; as cited in Helfat & Peteraf, 2009).

Dynamic capabilities are context dependent, therefore Helfat et al., 2007 proposed two yardsticks for calibrating dynamic capabilities: *evolutionary fitness and technical fitness.* Evolutionary fitness is one of the areas to measure dynamic capabilities performance. Evolutionary fitness can be described as a firm's capability to adapt its functions to the *external* operational environment and make a living in it. Four important influences on evolutionary fitness have been identified: *quality*, *cost*, *market demand* and *competition.* The second yardstick, technical fitness is measuring the *internal* capability of performance with the first two influences by capturing the idea of quality per unit of cost. The other two, market demand and competition, are capturing *environmental* influences. These three factors (technical fitness, market demand and competition) affect the external fit on evolutionary fitness (Helfat et al., 2007, p. 7). (in Figure 4).

DCA is one of the additional tools with complementary perspectives, for improving RBV's or RBT's ability to adapt and evolve value creation to achieve the long term sustained competitive advantage. It gives another framework and structure to understand and measure the influence factors, so that they can be taken into consideration when creating strategy. "Dynamic capabilities are part of the overall resource and capability base, but they are directed toward strategic change: what, how and performance outcomes" (Helfat et al., 2007, p. 13).

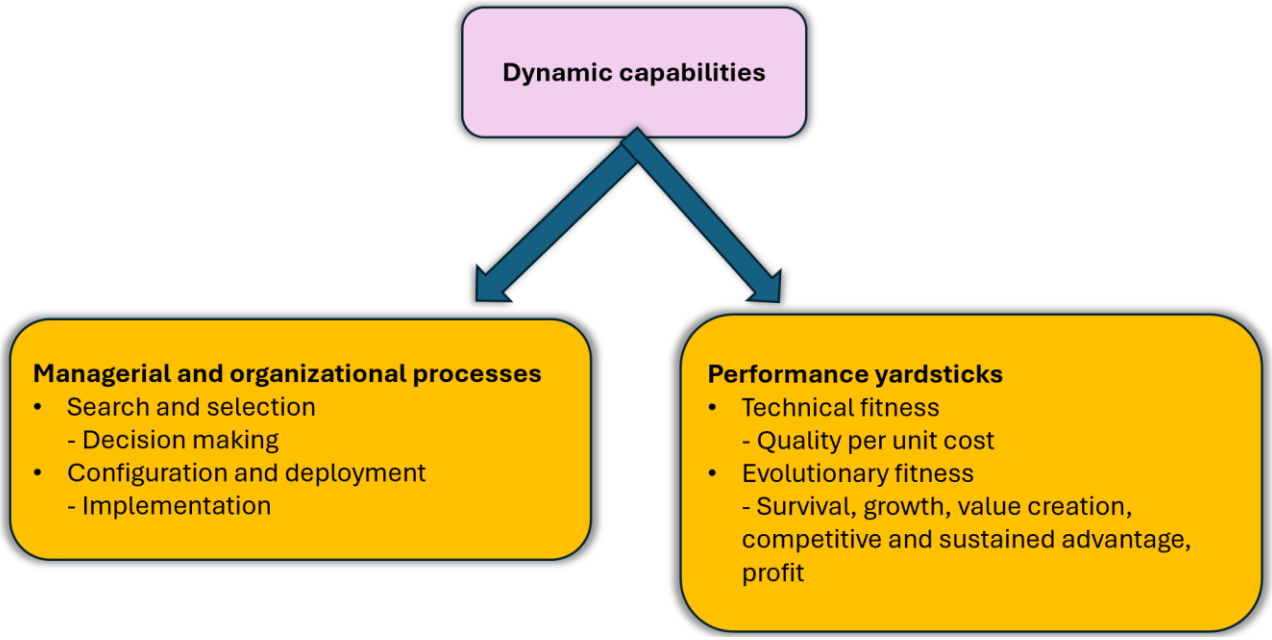


*Figure 3. Dynamic capabilities: process and performance yardsticks* (Helfat et al., 2007 p. 8).

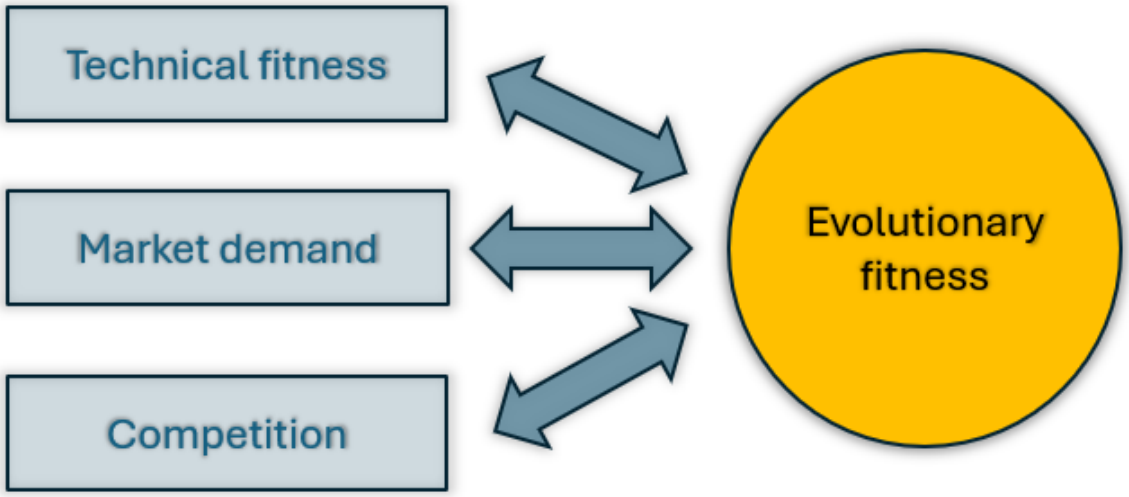


*Figure 4. Factors that influence evolutionary fitness* (Helfat et al., 2007 p. 8).

### 3.1.4 Competence-based theory (CBT)

Competence-based theory offers an interesting view for strategic management in sustaining competitive advantage in the firm. It is an independent perspective but has some roots from RBV and RBT like "uniqueness of the single firm and stressing corporate strengths" (Freiling, 2004, p.30). It focuses more on explaining the reasons for corporate success in a comprehensible way. It has a history of many authors and has evolved at least since the 20th century. Theory approaches the phenomena from resource-, competence and knowledge-based view. It wants to answer following questions: "Why do firms exist? How do firms emerge and change over time? Why do firms collapse and what are the driving forces? What are the drivers explaining the boundaries of the firm? How is it possible to explain the internal organization of companies which are made up of more than one person?" (Freiling, 2004, p. 28). Freiling also points out the findings of Amit/Schoemaker 1993 and Schoemaker (1990) about *variable rationality.* It implies that rational decisions are based on what decider has learned in the past and present, so decisions are partly individual rationales, which can change over time. Change is caused by new information, learning and personal experiences. (Freiling, 2004). CBT acknowledges that action-related competences can unfold the potential of resources and adapt to the operational environment for performance. (Freiling, 2004).

### 3.1.5 Knowledge-based view (KBV)

What is knowledge? “That what is known”, describes Grant (1996, p. 110). Knowledge based view finds the firm’s knowledge as the most strategically important of the firm’s resources” (Grant, 1996, p. 110). Value can be created by utilizing knowledge by transferring, communication, transforming to returns, acquisition and productivity. Value creating transformation needs organizational knowledge, where specialist or tacit knowledge can be communicated. Learning from others and creating a strategy for it starts knowledge generation which becomes a very economic and efficient way to improve the firm’s capability for the future. KBV has its heritage in RBV but differs by prioritizing the knowledge resource approach (Grant, 1996).

Further research has shown that future perspective should be concentrating more on the individual knowledge within the firm rather than collective level. The research implicated that prior assumption of social and environmental influences to individual’s knowledge might be less than assumed. This new approach can open new ways of learning and value creation (Felin & Hesterly, 2007).

## 3.2 Individual perspective

Individual perspective includes 10 theories, which are studying exchange phenomena from as name indicates, individuals’ perspective. It includes different conclusions of human behavior at different circumstances, but many of them have found some common ground to explain especially consumer behavior or behavior in relationships. These theories in general explain why individuals end up with a decision to do the exchange and what are the currently found rules with the exchange of resources between people. Reciprocity in good and bad is one common denominator for individual perspective theories. Because of their nature of social interaction, they include a lot of subjectivity and therefore uncertainties in terms of predictability. (Cropanzano, et al., 2017).

### 3.2.1 Rational choice theory

Rational Choice Theory fundamentally starts with the idea that people are rational, and they calculate the costs and benefits before making the decision for the action. By this definition people seek their own interest and even social actions are rationally motivated. This self-interest view leads to conclusion that people seek only solutions from their own preference to maximize their gain. In

this assumption, it is believed that every individual has all the knowledge about the alternatives as well as information about the outcomes when making choices. Rational theory claims that people's emotions or other subjective factors would not affect the choices, but they could pass that and make choices calculating rationally (Emerson, 1976; Scott 2000). There are also some rational choice theorists who are using it as a base to build on and they want to bring the social aspect into play. There are three research communities for rational research theory: *rationalist*, *culturalist* and *structuralist*. They all have different approaches, but on some occasions, they complete one another. (Lichbach, 2003). Traditionally rational choice theory was a chosen one for politics, labor markets, formal organizations, and criminology. Now the approach has been accepted for other fields such as family, gender and religion, which used to be considered as inhospitable. (Hechter et al., 1993). RCT is considered to have too rigid and narrow conception of rationality to be considered as general theory (Boudon, 2013). Also, some constructive development ideas were found, Hechter & Kanazawa (1997) brought out the view that when individuals are involved, rational choice theorists should understand the mechanisms of values and behavior, to be able to explain the results from human actions.

### 3.2.2 Marginal utility theory

Marginal utility theory was developed to make a difference to the older economic assumptions brought up by Adam Smith, David Ricardo and Karl Marx proposals that object's valuation is based only on labor and the cost of resources that were used to produce it. (Theory of value, Labor theory of value (LTV)) (Ehrbar & Glick, 1986; Carling, 1984; Douglas, 1927; Hagendorf, 2014).
Main researchers of the marginal utility, W. S. Jevons (England), C. Menger (Austria) and L. Walras (Switzerland) developed the idea during the same time, but independently in 1860s and 1870s. Later it was found out that similar theory was already developed in 1850s by Prussian H.H. Gossen. Theory suggests that individuals perceive different values for the goods, depending on the current quantity possessed or level of need (diminishing utility). Also, it prioritizes different classes of needs by utility at consuming order. All of them were making discoveries around the same concept, but from different angles. Menger's work of marginal utility is based on three arguments: *substitution*, *loss calculation* and *dependent utility*. Substitution means that a good or service can be replaced with something which is technically suitable for the task. Loss calculation means that the consumer will adapt to the situation by altering the consumption to the minimum needed. Dependent utility means that each individual item in a collection of goods contributes only a minimal

increase to overall welfare (Kauder, 1965). Walras and Jevons searched for value's functions as correlation of market economy and marginal utility, instead of Menger's approach to nature of value. Theory was further developed by Menger's student F. von Wieser, which combined sociological thinking with economic theory. These theories seem to have seven common problems in consumer action: "the rational character of consumer's action; *the nature of utility*; *the law of diminishing utility*; *total and marginal utility*; *budget planning and strategy*; *imputation*; *measuring of utility*" (Kauder, 1965, p. 115). Marginal utility has three main stages: *Positive marginal utility* (when having more gives pleasure), *Zero marginal utility* (when having more gives no extra pleasure, but does not feel bad either), *Negative marginal utility* (when having more it feels bad). These can also be separated to *present* marginal utility or *future* marginal utility (Kauder, 1965; Marshall, 2013).

An example of diminishing utility and valuation could be the situation that how would you value an available meal if you haven't had one in eight hours, compared to the moment that you just finished your lunch? Quite often, when in hunger, the meal is more valuable (positive marginal utility) compared to when you are already full (zero, or negative marginal utility), but if you can save the second meal for later use (future needs value), it can still interest you (positive marginal utility) (Marshall, 2013). Marginal utility theory has evolved since time of "economic man", which calculated everything by cost and utility, towards the subjective theory of value (Kauder, 1965). To make clear what is economic man, "(a) He is completely informed. (b) He is infinitely sensitive, (c) He is rational" (Edwards, 1954, p. 381).

### 3.2.3 Subjective theory of value (STV)

Different articles seem to use marginal utility theory and subjective theory of value terms very similarly. Following quote from Stuart, (1895, p. 75-76) summarize subjective value more as marginal utility theory: "This principle of subjective value is that the desire for any particular object or class of objects tends regularly to diminish in intensity with the increase in the degree of its satisfaction, and that, accordingly, the value of any one of the particular objects which yield the satisfaction diminishes as their number increases". These two theories have something in common; they are based on the findings of W. S. Jevons, C. Menger and L. Walras, as well as in both theories the valuation is done by individuals' subjective vision (assuming trade is done voluntary).

In resource exchange, valuation of resources is crucial, so that the exchange can be made. In the case of traditional two-way exchange (buyer-seller) the valuation is done from two perspectives. The seller needs to evaluate the total costs and possible profit for securing the future transactions to set the minimum level of valuation. The other valuation is done by buyer and that is always subjective, by marginal utility at given time, place, quality and quantity in terms of need and preferences. If mutual agreement of valuation of exchangeable resources cannot be found the exchange will not happen (Weber, 2019). If the seller finds that his valuation is too high for the buyers, valuation must be re-evaluated and adapted to the current acceptance level or find value accepting marketplace. Adapting valuation might mean cost adaptation (e.g. lower costs at all levels, material change (quality, quantity), increased production speed) or change in exchangeable offering for demand (e.g. customization, combination of resources). The simplest exchange is between financial resources to material resources, but it is not limited to just them. It can be a combination of several resources including mental resources. E.g. in selected cases the seller can calculate the valuation so that some of the value received will come by increasing the mental resources in the form of goodwill and only some part by financial resources. The value for an item can be subjective from individual to individual. An item from a meaningful event or person can have more value (personal sentiment), than its monetary value would suggest. The value can change by context, such as rarity, time, place or cultural significance. For example, ice-cream at the beach is valued higher in sunny summer weather than in freezing winter conditions. This theory also helps to explain why some items are collectable and their value can increase over time. Or why can some salespeople get the higher price (or give less discount) in exchange for the same commodity? A seller's positive encounter with buyer can be seen as value added by buyer and the buyer is willing to compensate it in the form of accepting the given exchange price. How buyers experience the seller's encounter is very subjective and cannot be guaranteed as a working method at all cases, but it is low-cost method to implement and wish of reward for resource exchange.

### 3.2.4 Social exchange theory (SET)

Theory is based on Homans's work *Social Behavior as Exchange* (1958). Theory finds exchange as *fulfilling needs* between *individuals* at different types of relationships or interactions. Exchanges are evaluated by *costs and rewards*, which makes the exchange profitable or non-profitable. *Comparison level* is based on *past experiences and societal norms* to evaluate the "exchange rate" for gaining or loosing. Also, there can be *alternatives* with a different valuation, which can alter the

resource of exchange (Marshall, 2013). At the very moment of initial exchange, parties need to have equal valuation, or transactions cannot be made (Homans, 1958). Because exchange is done by individuals, valuation at exchange is very subjective. If an individual feels that the exchange of resources with someone is not equal or positive and it cannot be influenced by such, it will be ended. (Homans, 1961). Every exchange relation also has some level power relation, by which other one tries to get the control of the exchange terms and "bargain" rights (Baldwin, 1978). Social exchange has always some reciprocate means to have a "fair" exchange. This starts the social interaction and trust building among social networks in hope of further beneficial exchanges in the future (Blau, 1964).

SET has also received some critic like Emerson, (1976) ""Exchange theory" is not to be taken as a theory. Rather, it is a frame of reference that takes the movement of valued things (resources) through social process as its focus" (p. 359).

### 3.2.5 Equity theory

Theory has been originally developed by Adams in 1965 to measure equity and inequity at workplaces, by comparing inputs to outcomes as employment exchange. Inequity is felt if inputs do not meet with outputs, (overrewarded (guilt) or under rewarded (anger)). Overrewarded normally does nothing, but under rewarded wants compensation. Normally reaction leads to shifting the input to an appropriate level. As an employee this means altering the quality or quantity so that it would align with the reference group. Another way for equality is to try to get the output compensation higher. The same method applies outside workplace, individuals try to maximize their outcomes and have low tolerance for inequity. Inequity balancing can be seen in groups and relationships. (Adams, 2005).

In social exchange, equity theory might come up in situations where e.g. content creator is getting voluntary payments from audience. Individuals might feel overrewarded (feeling guilty) and want . to compensate the situation to equal by donation. Still the feeling of inequality is always subjective, so free riders can occur. (Adams, 2005).

### 3.2.6 Resource theory of social exchange (RTS)

Resource theory of social exchange (RTS), also called Resource theory (RT) or social resource theory (SRT), was conceptualized by Foa & Foa in 1971. Theory has its roots in rational exchange theory and other social exchange theories, but their main findings were the definition of resources to six categories: *love*, *status*, *information*, *money*, *goods* and *services*. Resources can be exchanged between people, and exchange can include several resources at the same time. (Foa & Foa, 2012).

In RTS resources can be studied in two classified dimensions, *particularism* (vs. universalism) and *concreteness* (vs. abstractness) (Dorsch et al., 2017). With categorization it is possible to observe the exchange event and find different exchange patterns between resources and dimensions. Some exchangeable are more universalistic and value is less dependent, from whom it is received. RTS accepts tangible and intangible resources and subjective valuation for them at exchange, which can be affected by the familiarity between exchangers (Foa & Foa, 2012). Time is not considered as a resource, but it is acknowledged that on some occasions it can act as one and then it must be treated as its own resource class (Brinberg & Wood, 1983).

RTS and its later versions, by original creators, have been cited over two thousand times (Google Scholar, 2024), which means that they have been recognized as relevant theories at social exchange schemes. RTS describes very well the social exchange events between people, with needs and preferences, so it can be used for behavioral studies at many levels. Theory is not trying to search for answers outside the social interaction and therefore it is missing the flexibility for wider understanding of the resource exchange.

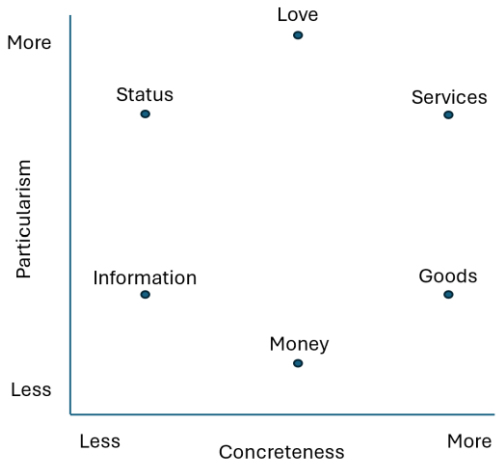


*Figure 5. The cognitive structure of resource classes* (Foa & Foa, 2012, p. 18).

### 3.2.7 Consumer resource exchange model (CREM)

Consumer resource exchange model (CREM) acknowledges RTS as a foundation for the model, but they wanted to create a hybrid of motivational and transactional theories to be able to understand consumer behavior better (Bristow & Mowen, 1998). Theory is not as famous as RTS, but it has been applied in several research at consumer behavior related studies e.g. Dorsch et al., 2017. Instead of Foa & Foa's six: Love, Status, Information, Money, Goods and Services, CREM recognizes four resources, and they differ also by their contents:

1) Physical resource needs: one's need to sustain life, obtain sensory pleasures, and maintain or enhance his or her physical characteristics (e.g. muscle tone and physical beauty).
2) Social resource needs: an individual's need for relations and interactions with other people; one's desire for inclusion in one's group.
3) Financial resource needs: one's need to obtain money, goods, property and other assets with monetary value that are transmittable between two or more people.
4) Information resource needs: one's need to gain knowledge, to investigate, explore, study, and/or understand phenomena; one's need to satisfy intellectual curiosity, to engage in cognitive activities.

   (Bristow & Mowen, 1998, p. 93)

These four resources are not considered "as all-inclusive… additional resources such as spiritual resources may exist" (Bristow & Mowen, 1998, p. 91). This theory also does not find time as a resource. Instead, "time is seen as the temporal space" where resources are exchanged or used (Bristow & Mowen, 1998, p. 94). According to CREM, resources have different levels of satisfaction, and they are need dependent. Resource exchange is done to fill that required need or to help to reach the goal set (Bristow & Mowen, 1998).

CREM model serves as a framework to study interaction between people from "motivation to exchange needs" point of view and serves its purpose for marketing and consumer behavior. It has a lot of elements, which could be applied even for wider perspective, but then it gets more complicated to measure. Definitions for resources are logical in their field of study but cause some challenges to expand the theory for different levels of resource exchange.

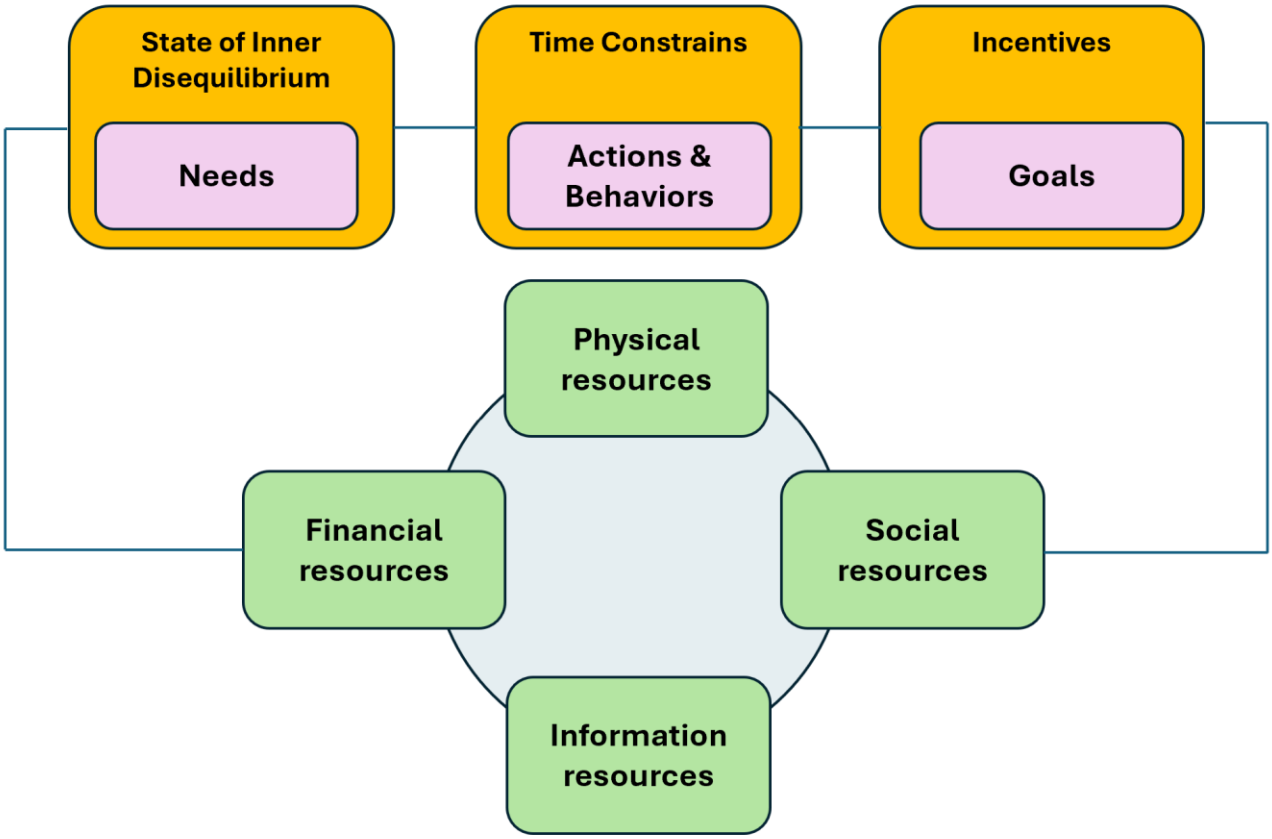


*Figure 6. Illustration of the relationship between the CREM and activities, needs, and goals as suggested in the general motivational model* (Bristow & Mowen, 1998, p. 94).

### 3.2.8 A theory of reciprocity

Reciprocity theory was starting to develop in 1960 by Gouldner. Reciprocity means exchanging things with others for mutual benefit or responding to kindness with kindness and to unkindness with unkindness. Some studies have shown that people have rejected low offers just to punish the unkind seller, even if it was against their material self-interest (Falk & Fischbacher, 2000). Rabin also pointed out an interesting view (1998) “a crucial feature of the psychology of reciprocity is that people determine their dispositions toward others according to motives attributed to these others, not solely according to actions taken” (p. 22). Because intention has a big role in how people are going to react on results of action (related to the final consequences), it means that in unwanted result they must be convinced that it was unintentional action, without underlying motivation.

Inequity approach proposes that “a person will punish another person if and only if this reduces

the inequity between the person and his opponent (s)" (Falk & Fischbacher, 2000, p. 6). Falk et al., (2000) also found at their experiment that inequity situation in reciprocity driven punishments, the mean is not only to reduce the inequity but to reduce opponent's gain.
In resource exchange reciprocity actions normally mean the exchange in mutual consent and this way both can gain (Blau, 1964).

### 3.2.9 Conservation of resources theory (COR)

In general conservation of resources theory is a motivational and resource adaptation theory for conserving and gaining resources. Big contributions to the theory have been made by Stevan Hobfoll (Holmgreen et.al., 2017). Some sources consider COR as an independent theory, because it has such a strong stress related focus on resource exchange. But it is also undeniable that it has a lot of similarities with social exchange theory - based theories. In COR, people want to *invest in resources to protect them* from possible resource losses, which generates resource reservoirs. It has been used for health-related studies, especially stress effects on employees and what resource exchange methods people use to cope with it. Stress occurs when resources are threatened, or they are lost. COR emphasizes the stress reaction for limiting the resources losses putting the resource gaining on secondary priority. (Hobfoll, 2002). COR does also bring up the finding of "loss spirals" in resource-poor and resource-rich environments. It means that in e.g. resource-poor environments an individual might drift into a situation where resource losses start to accumulate, and recovery is difficult. In the resource-rich environment the spiral is smaller or weaker, because of the compensating resources, which might help in coping with the situation. It explains one of the COR principles "those with greater resources are less vulnerable for loss and more capable of orchestrating resource gain" and vice versa (Holmgreen et.al., 2017, p. 447). Theory also takes into consideration that even though resources are somehow universally valued, the socio-cultural influence can affect the relative valuation. COR theory knowledges different resource classes as follows: objects, states, conditions, and other things that people value (Halbesleben, et.al., 2014). Even the theory has its roots within the health-related wellbeing perspective, it can be seen used and usable at explaining the certain behavior models in resource theories in general (Dorsch et al., 2017).

### 3.2.10 Theory of selective optimization with compensation (SOC)

Theory of selective optimization with compensation is finding new rules for exchange which are related to an age as well as physical or mental well-being or of an exchanger (Dorsch, Törnblom, & Kazemi, 2017). When people are younger (and/ or healthier), they take more risks with resources, and they need/ want different types of resources. They are adjusting to the dynamic environment with adaptive capabilities, to navigate the challenges of life. They have higher tolerance for set-backs, so they can make riskier exchanges, which can be seen as increasing resource reservoirs. It could also be explained by the life expectancy (life stage) and possible future chances of recovering the lost resources. Age does a lot of things, it affects at least biologically, physically, cognitively it changes perspective. Maybe time has helped to build resources reservoir to get along, so the goals change compared to the youngers. Since ability to do things changes, the focus shifts to more reserving resources and how not to lose them, instead of gaining more resources (Dorsch, Törnblom, & Kazemi, 2017).

This theory is very interesting, because it concentrates on factors which alter person's behavior towards resource exchanges, at least from time perspective. From a risk-taking point of view, when getting older some long-time value yielding investments might not be interesting, but, if possible, could it be done already for the in-heritage point of view instead of for one's own benefit? When getting older, the risk can also be felt smaller, because the overall liability time will expire sooner, so the engagement with possible wrong choice is shorter.

## 3.3 Recap of the chapter

15 theories related to research exchange have been reviewed and the following recap of the remarks can be made. *Firm perspective theories* (five) had in common that the right utilization of resources can create advantage for firm, which increases the success rate. These theories were mapping the strategic path how resources can be turned into performance (Freiling, 2004). They are giving tools on how to find the winning recipe from their own mix of resources, but of course it requires that there are winning ingredients available or there are resources to acquire such. Some of the theories raise the importance of individual knowledge as the resource which can make the difference for the value creation. For the value creation Grönroos and Voima (2013), brought up a great view of creating value-in-use. This means that value creation starts with the provider, but to

be able to receive a maximum value at exchange it needs to also have value-in-use. The difference to marginal utility theory with present and future value, is that future value can be a need or value increase in time, instead of use-in-value, which might have a value-chain effect.

From the thesis point of view, there are a few key points to mention. Resources are the building blocks for success, but recognizing the right ones is not easy. Human resource with knowledge can be the key success resource if it is unused (Grant, 1996). In all of the theories, at least some communities, person personnel or knowledge (hold by people) were in key role to decide, develop and execute the right strategies for success. How the potential in a firm is recognized and utilized in a constructive manner, which would benefit all? Potential without motivation will never give the best possible result, what could be the motivational factor to be exchanged to full potential? (Sinek, 2016). As opportunity cost or in COR theory, sometimes resources are lost intentionally to be able to protect or gain resources (Holmgreen et.al., 2017). It might mean in the work community the need to remove toxic influences, so that hidden potential can be raised. An active resource exchange model might give some additional thoughts what can be expected during the cycle of resource exchanges.

*Individual perspective,* ten theories, have in common that there is always a person on at least one side of an exchange. They also have the research lens focused on different aspects of personal subjectivity for need, motivation, valuation, behavior, reciprocity, conservation and or optimization at resource exchange. If resource categories are ignored, they all could be bent into one theory, explaining different views of the exchange events of the person. Some of them (subjective theory of value, social exchange theory, equity theory and reciprocity theory) need another person to exchange or compare with (Mitchell et.al., 2012). It is logical, since interaction with others is a common way for exchange. COR, CREM, SOC and rational theory are describing more why exchange is made, trying to find reasoning for the actions. This is useful for marketing and firms which are wondering about the drivers for purchase. This study is aiming to look “beyond the counter” on every resource use moment, which might offer new opportunities and perspectives for exchange. Especially marginal utility theory and subjective theory of value are concentrating on valuing affecting factors and that gives a lot of variables for the exchange process. Valuation is an important role from a business point of view, and it also gives an interesting nuance for the whole

exchange event, when subjectivity can determine a lot as well as time, place and other circumstances. It means that good preparation and valid knowledge can open opportunities, which would otherwise slide by. It also opens a door to an idea of constantly balancing with resources with every decision and act made or denied to make. Being able to be prepared for these events of exchange it is easier if the mechanics and the dimensions are known, even if they contain unknown variables.

Resource exchange seems to have three dimensions (figure 7): *Dynamic information flow*, *Constant chain of decisions*, and *acts* or *actions* based on those. These dimensions influence each other and create new information for the next decision cycle. Information flow is receiving signals not only from the decisions made or action level, but also from outside, which might set the frame what, how, where and when resources should be exchanged. Resources are activated by decisions according to the available information of needs. This dimensional view will help to understand the layers of functions at active resource exchange model, which will be shown in chapter 5.

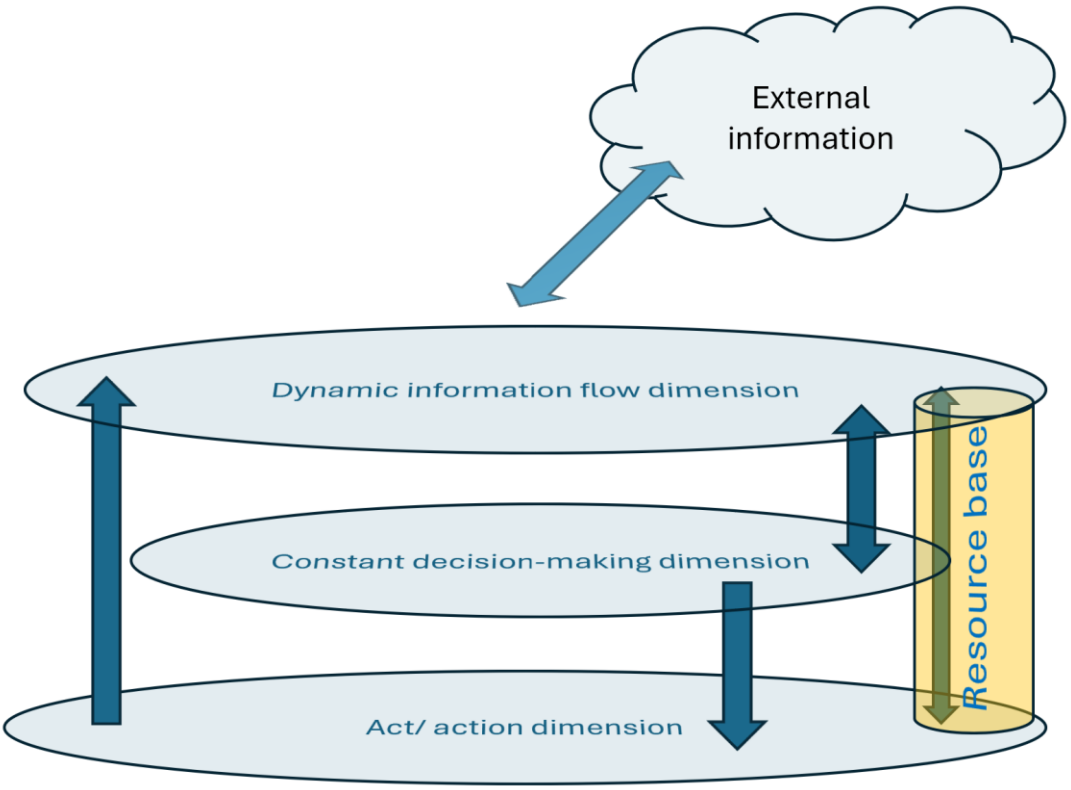


*Figure 7. Resource exchange has three dimensions to work with. Dynamic information flow, constant decision-making and act/ action.*

# 4 Active Resource Exchange

This chapter presents revised concepts of exchanging resources as well as active resource exchange model which was created to describe the phenomena. Resource exchange can be seen more than just interpersonal interaction (individual perspective) or how to turn firm's resources to performance (firm perspective). It is a complex series of exchange events at which the above-mentioned theories explain some portions, situations and perspectives of it. To open more of the general chain of exchange events some conclusions and redefining are needed. This does not exclude the known theories or their definitions, but the intention is to create an umbrella model to where all theories fit with their expertise knowledge of these points of views. Resource exchange is also a journey between interpersonal exchanges (active resource exchange), and it is good to knowledge it.

## 4.1 Redefining the resource exchange to a general level

Our most common interaction in our everyday life is actually resource exchange, choices what is needed and which/ how resources are exchanged. It has dominated human behavior and has evolved from gatherings to modern merchandising (Dillon, 2019). In the beginning, value was in the surviving as finding energy resources (food) and it has shaped into investments in accumulation in wealth. How we value our resources or prioritize our actions determines what is the most efficient way to pursue towards our goals and objectives. In resource exchange, transmittable tangible or intangible resources can be exchanged just with the rights or power for possession and use, not necessarily the ownership. There are several definitions for resource exchange. Social exchange perspective theories definition requires person to person situation (in table 3 as partner). In active resource exchange requirements are more flexible and exchange can also be with any partner or done alone, variations seen at table 3. To gain and protect resources is the core reason for exchange, also for internal exchange.

*Table 3. Variations of different active resource exchange situations.*

| Active resource exchange situations | | | | | |
|---|---|---|---|---|---|
| **exchange event** | **Internal exchange** | **External exchange** | | | |
| **exchange object** | alone | with nature | others objects | partners | with partner (s) |
| **exchange decision** | personal | one-sided | one-sided/ forced | | mutual/ volunteer |
| **exchange method** | Balancing resources | give and/or take | give and/or take | | give and/or take |
| **exchange reason** | internal reallocation and consumption | gain and/or protect resources | gain and/or protect resources | | gain and/or protect resources |

Valuation of resources is dependent on many things, as explained more detailed later, but here are some general findings of it. Resource exchange is often a combination of resources exchanged to combination of other resources; by categorizing resources makes it possible to emphasize the valued resource as well as scrutinize how we can affect the resource levels positive or negative. Resources are not unlimited even though some of them cannot be measured exactly. Some exchanges of resources are valued differently by the moment, place or mentally so they cannot be always valued easily, and it leaves the personal (subjective) valuation for the recipient. Therefore, exact measurable formulas are difficult to form, so that they would always calculate the correct value for all resources. In model which was created at this study, approaches the resources and exchange with open view. Exchange is not limited to any particular resources, nor to any particular method of exchange. There is only one base rule to which everything lies: *in volunteer resource exchange the subjective value is always equal, or exchange will not be made.* The rule opens the possibility to mix material and immaterial exchange in different proportions so that transaction is **felt** to be equal. It is often a mix of rational and subjective socio-emotional valuations within the context. The subjective socio-emotional part is the dominant one to decide to accept or deny the exchange. It can accept 100% rational decision based on economics, but then it must be in line with personal values as well. The mental side tends to find the reasoning for equalizing the exchange if need/ want and opportunity aligns.

### 4.1.1 Resources

In revised exchange model, resources must be defined so that they are exchangeable (tangible, intangible, material or immaterial). The existing resource reservoir creates the base for ability to act and any disturbance or need in the resource base will lead to resource exchange. In general,

resources control possibilities to reach the objectives. The aim is to increase the value of the resources, which could help to achieve the next goal (gain and protect resources), by exchanging them. In certain situations, we try to consume, eliminate or affect the availability of others' resources to get into a more favorable position with possessed resources (Barney & Hesterly, 2020). This research draws overall picture at theories of resource exchange and value creation to find relation to decision making cycle and other contributing elements. Resources can be understood and defined in many ways; in this context, in this study resources are divided into **six main categories** by their nature of value in goal-oriented actions. This definition of resources also allows us to think what are the resource categories, which at imbalance can harm or make life difficult. These resource categories are affected if someone wants to influence decision-making.

- Financial
- Material
- Human/physical
- Mental/psychological
- Energy
- Time

**Definitions of redefined resources, in this research.**

***Financial resources*** can be any funds, assets, credits or tokens which have some monetary value or can be changed at such. Some material resources are possessed mainly for their monetary value and can then be considered also as financial resources. Medium of exchange was developed to make exchanges of resources easier between parties, who did not have mutual exchangeable resources (coincidence of wants as goods or services) at time, as with barter.

***Material resources*** can be divided into material or immaterial resources. Material resources can also be divided to natural and manmade materials. Material resources can have great value in the financial aspect as well as in the functional aspect. Material is sometimes exchanged as barter. Immaterial resources can be services, immaterial rights or e.g. wonders of nature

***Human resources (physical)*** are individuals who own their own time resources and have physical presence and or skills to attribute. Human resources also require physical and physiological needs to be able to function. Sometimes human resources are needed to reach physical appearance at

some moment at some location. One can use the physical presence only at one place at the time.

***Mental resources (psychological)*** are part of human resources but concentrate on skills in the mental and psychological aspect. Some tasks do not require physical presence but require higher intelligence capacity. Mental resources are also processing information we receive and evaluating the actions needed by knowledge and values. Some attributes related to mental capability: will/ motivation, competence, tactical intelligence, rightness for the task (values), ability to adapt the situation. We can also increase our mental resources by studying or practicing things which give us mental pleasure. E.g. Individual may do volunteer work (exchanging human-, mental- and time resources) to receive "only" a good feeling and gratitude which increases mental resources.

Individuals in general have physical and mental skills in one body "2 in 1", they can never be totally separated. Individuals' capability for performance can be affected by mentally (psychologically) or kinetic (physically). One reason to divide human resources into two separate resources is the pallet of influencing tools, which are designed to affect by mental to physical or vice versa. Human (physical) resources are always combined with mental resources, and they might be needed in different proportions, depending on the task.

***Energy resources*** are divided into three categories:

- for person (physiological energy needs: water, food etc.)
- fuel for (vehicles, heating, etc.)-> manmade/ natural
- electricity, wind, water, nuclear, sun etc. non-renewable/ renewable)

Energy resources enable things and people to stay in motion and function, therefore they are essential, highly valued and reasoned to protect. Energy resources are often under influence in conflicts to make physical effect (e.g. no fuel for vehicles or heating), which leads to psychological effect on public opinion, which could turn the situation in favor of influencer.

***Time*** is difficult to determine as a resource, some theorists as Bristow & Mowen, (1998, p. 94) defined: "time is seen as a finite temporal space in which activities are performed." In this research time is defined as a resource, because it is the first and only exchangeable thing every individual has equally, and with which may be used to pursue for increasing value of other resources.

It is debatable, does time just allow the use (action) of other resources, but its essence is so vital that it cannot be ruled out from the model. In action time resources are exchanged in the form of personal human- and mental resource for exchange of something which is needed and valued. Decisions are made so that time will not be wasted, and alternatives are compared which would be the best option, is it worth it. When time resources are not used well, it might feel wasted and that might result in negative value for mental resources. Also, the claim that "time cannot be stored for later use" is understandable, but is it so? If there is nothing more valuable to do (to use time for), time can be exchanged in the form of help for others, with reciprocity terms that used time will be returned as help when needed it. This way time is stored by other human resources who owe it for future needs and is claimable. Employee and employer resource exchange follow the same path, employee has some skills (human resource) and knowledge (mental resources), which employer desires, but they are often valued by hour from employees' point of view (skills or knowledge is usable not consumable), so only consumable measure is time. To be able to deliver these features employee has used time or will use time (acquiring the skills and knowledge or using them for the task). There must be an evaluation phase for options, where to use available time resource, from where it is away, how to get best value for it (what is the major resource need, at that moment). From the employer's point of view, he is exchanging some package of compensation in exchange for getting the employees' skills and knowledge in firm's use for agreed project or time. Employee's point of view, what are the options from what is needed, wanted, what are the alternatives and how that "lost" time is valued? (Coleman, 1990).

### 4.1.2 Resource base and capital.

The *resource base* is formed of six main *resource categories (figure 8.)*. Categories contain all available *resource types*: (tangible, intangible), with direct and or indirect availability, or ones to which have power to control some resources for the benefit. *Resource reservoir* is the selection of all available resource types within categories. *Resource capital* refers to the contained value of the resource reservoir. Resource capital might lose or increase their value over time, regardless of consumption.

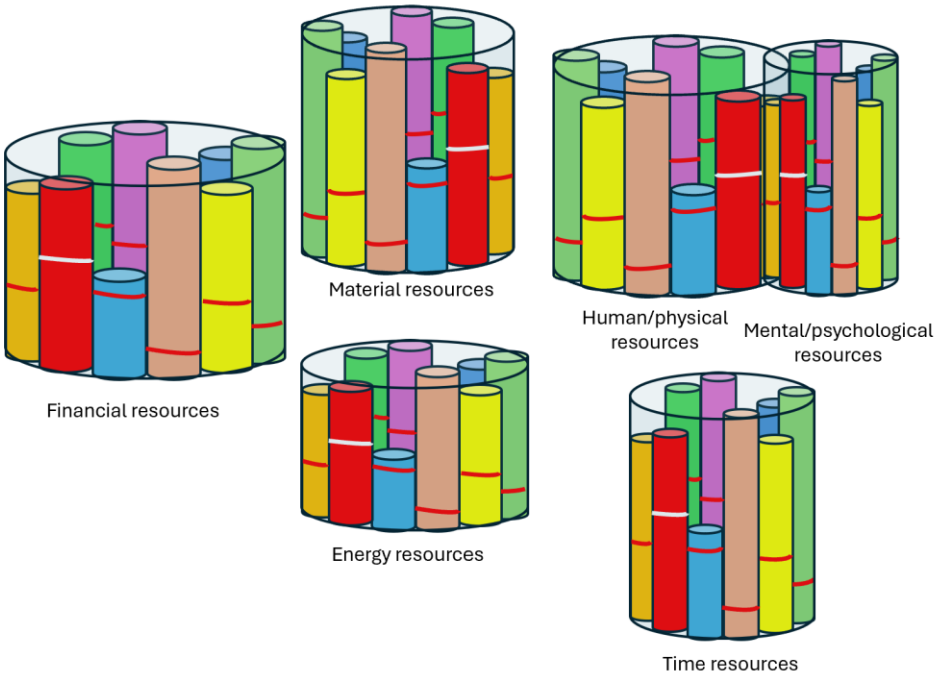


*Figure 8. Example illustration of resource base and capital (all resource categories with resource types)*.

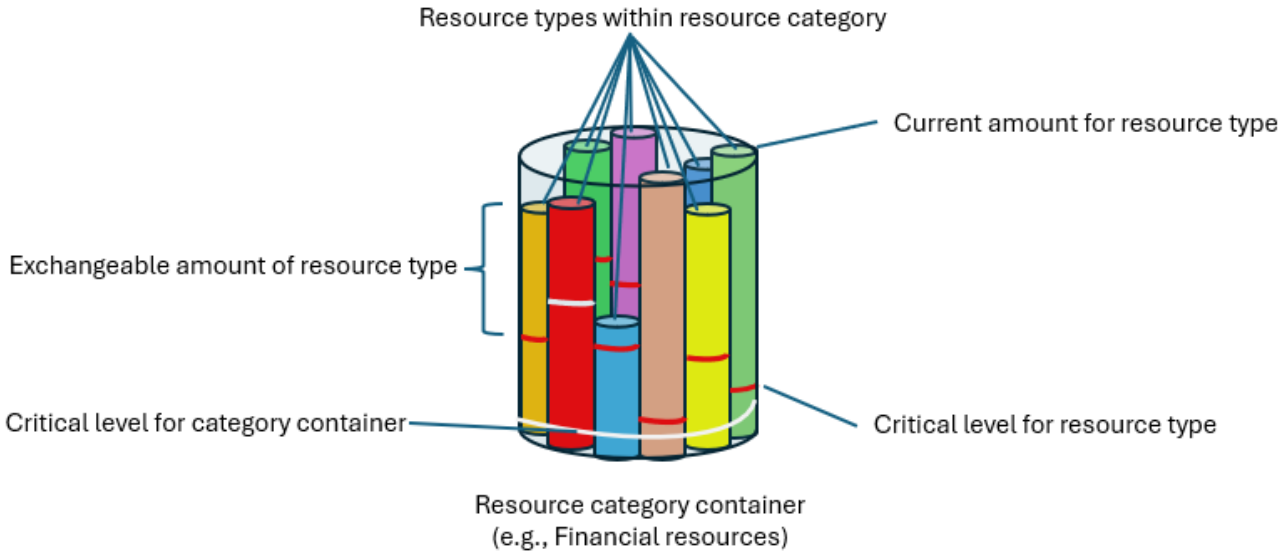


*Figure 9. Example illustration of resource category "container" and resource types in it.*

**Resource capital balance**

As said resource base is formed by resource categories. Each resource category has its own resource types, classified by their main function at the given moment. Even illustrated as “pipes in containers” (figure 9), resource types have multiple roles in or for several resource categories when activated or shaped to suit the circumstance. To be noted that at illustration, resource type *amount* is mentioned, even some of the resources are intangible or unmeasurable, why? First, they express the existence of that resource type and second, in illustration it describes how resources are in reserve as “amounts”, until they are valued/ exchanged and/ or consumed. For certain limits, resource types can substitute for other resource types to satisfy the need in exchange. Because of the nature of exchange, resources consumption returns to same or other resource categories (in volunteer exchange) as balancing value (accepted equal at the time of exchange). After exchange and over time, the resource capital starts to change in value by changing preferences or aging (increasing or decreasing) and it is worth nurturing.

Problems occur if some resources categories or resource types reach a critical level (imbalance) or are getting close to it. It starts to affect the exchange behavior as to its availability and value. Resource categories also have critical limits (combination of all resource types within category) and passing them can paralyze the whole resource base as in chain reaction. Fluctuation in amount and/or value in resource types is constant and it is easier to compensate by others, because of the fraction value in category. If in a situation of reaching the critical limit a resource type is considered a high priority, all available resources are used to balance the situation.

Balancing sounds paradoxical: more is less valued and less is higher valued, so consuming would keep the total value in balance? In a way it is so, because in exchange (consuming) it is perceived to be balanced and equal at given moment, also it is valuated from inside perspective, which can be adaptive. To keep the balance, consuming cannot concentrate too much on one resource type or category. From time-to-time resources need to be gained or reserved. Circumstantial factors and outside perspective (alternatives etc.) can make valuation different compared to internal valuation. Again, we need to remember the context; critical level can be subjective and reflect the needs within the circumstances. Resources have causal contribution and they “tend to generate other resources” (Hobfoll, 2002, p. 311). Hobfoll continues “lack of resources tends to undermine stability and positive psychological outcomes” (2002, p. 311).

*E1)* Individual donates all the excess material resources away to be able to live in the woods with nature. In this exchange material goes away from resource capital, but mental resources receive the good feeling and relief from donation as well as drops off the burden from maintenance of material. A new lifestyle makes it possible to enjoy new experiences, which is worth it.

*E2)* Art from material resources type can be changed to financial resources type, when sold or if valued by creditor, it can work as collateral for credit. Resource exchange from material to financial resources.

*E3)* Food is stored as a material resource, but when consumed by human resources it exchanges energy- and/or mental resources (pleasure), as well as ability to have energy for physical activities.

The resource exchanges were in balance with subjective value, otherwise it could not have been done. Subjective value can also decrease sometimes, like a purchase which does not feel that valuable the next day, e.g. a fun night at the restaurant with friends might feel bad, but if it generated good memories, it might be thought of as worth it.

**Resource types**

Different existing resources within the main resource category. They can increase or decrease by their quantity, quality and valuation. Critical level is subjective and reached if lack of some resource type causes problems for reaching the goal/ objective. Variety-, quality-, value- and possibility to subsidize of/ by other resources determines the critical level. Rivals might try to use the critical levels as leverage in negotiations (power at exchange p. 40). Between available amount of resource and critical level is the limit for exchangeable (Hobfoll, 2002).

### 4.1.3 Other resource exchange related influencing factors.

**Goals**

Our goals are always based on *gaining* or *protecting* resources, in form or another (Holmgreen et al., 2017). We have different level goals in the short and long term, but decisions are made to support and secure our path on the way. On the way to the main goal there will be a lot of exchanges of resources. From a commercial point of view the opportunity could lay on that journey and how we can make it easier, more comfortable or with less intermediate resource exchanges (e.g. virtual

marketplaces for resource exchange such as e-bay, Alibaba and Amazon). Challenge is that we do not necessarily know the truth about the resource capital and what goal is activated to anticipate the action or offering for resource exchange. To be able to predict one's actions we would need to know the highest priority need/ want at given moment and preferences to fulfill that void. (Kiser & Hechter, 1998)

**Motivation**

People's motivation is important, but sometimes challenging to enhance. It is difficult to know individuals' interest, preferences and current resource needs, especially when priorities can change very fast. Often motivation is linked to the importance of the task, as well as time (moment) and duration of the task compared to reward. Higher priority leads to higher motivation to complete it as needed, because it is felt higher valuated. High value also requires good communication to be able to inform the importance of the task, and its effect to the final goal. Motivation can also be linked to the assumption that it is linked to the core goal, which is to gain and protect resources. Gaining resources is a way to possess something better for the next exchange, which would protect the other resources, like resource barriers which would have higher tolerance. This cycle is motivating for gaining, more resources, more to protect. All the pleasure related resources just makes the journey more pleasant and creates mental coping capacity. High motivation is often leading to higher resilience for small setbacks, given effort correlates also with the motivation. High motivation usually links to more efficient use of potential available. Demotivational can be any inequity felt by the individual, even the lack of sympathy from another significant individual. (Kanfer, 1990; Locke & Latham, 2004; Petri, & Govern 2012; Sinek, 2016).

**Valuation**

In resource exchange, valuation is subjective to the need/ want of exchangers within circumstances and time, with influences of socio-cultural context, but it can also have rational factors involved, such as accessibility, scarcity and degree of readiness (Dorsch et al., 2017; Ekeh, 1974). Power relations at exchange can also affect valuation, but mainly for the acceptance of valuation. This is covered as a separate factor. Alternatives have some influence on the valuation process as well. Combining these elements resulted in the following structure (figure 10), definitions of terms at table 4.

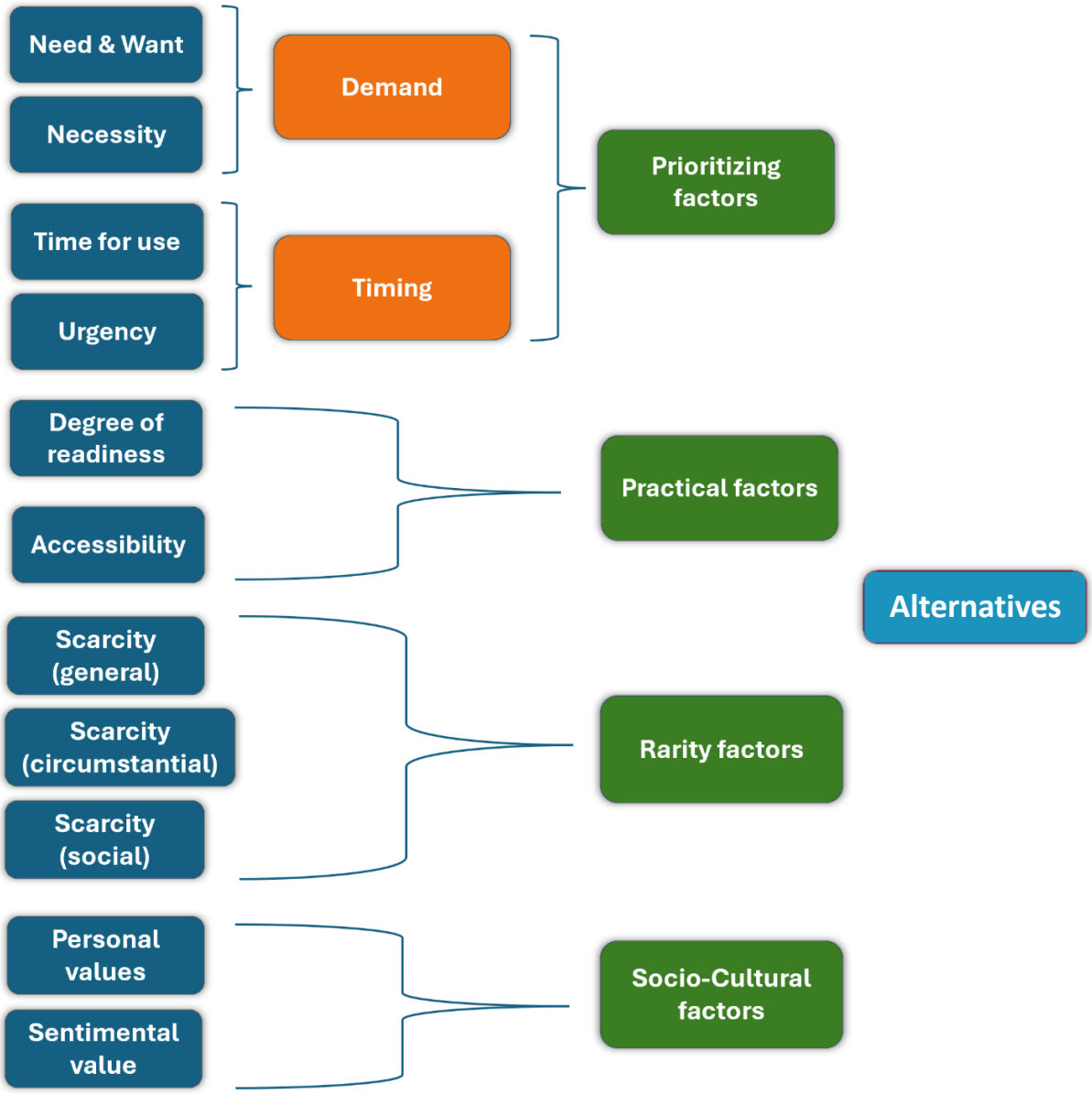


*Figure 10. Valuation influencing factors, descriptions at table 4.*

*Table 4. Description for value influencing factors in figure 10.*

| Short descriptions of the value influencing factors |
|---|
| **Need & Want** are the resource deficits which raise the eager for exchange. |
| **Necessity** indicates the level of importance for the need and want. |
| **Demand** level is valued with need, want and necessity. |
| **Time for use** determines timeline when resource is planned to be used or is the real value in use. |
| **Urgency** determines the timeframe when exchange need to be done. |
| **Timing** value is combination of time for use and urgency. |
| **Prioritizing factor** is combination of demand and timing, which ranks the exchange and affects the valuation. |
| **Degree of readiness** is describing how close it is to the expected level of readiness or how much resources must be used to get it to the needed level. |
| **Accessibility** describes the functional availability/ reachability to do the exchange. Are there practical obstacles which could make exchange event so resource demanding that it influences the valuation. |
| **Practicality factor** will be valued by degree of readiness and accessibility. |
| **Scarcity (general)**, valuation is done in economic sense and the rarity does not depend on time and/or place. |
| **Scarcity (circumstantial)**, valuation is made with situational sense, rarity is time and/ or place dependent. |
| **Scarcity (social)**, valuation is made with social sense and rarity is based on social values. |
| **Rarity factors** are combined from these three scarcity variables. |
| **Personal values** like ethics, moral, interests etc. influence valuation as well. |
| **Sentimental value**, is based on personal subjective value and cannot be underestimated. |
| **Socio-Cultural factor** is based on personal- and sentimental values. |
| **Alternatives** can affect valuation by different ways. They can affect certain factors, like rarity, practicality and timing, in valuation process and therefore it is taken into concern in the figure 10. But alternatives can mean different exchange partners or different exchangeable, which can alter the valuation from option to option, by desire or competition. |

**Power at exchange**

Who has the power at the exchange or is exchange always equal? Situations varies and needs with alternatives as well. Low level resources, lack of alternatives, high priority need or urgency could cause situations when other parties will get bargaining power over others. Power situation might be changed, because all the available resources can be used, and exchangeable can be switched to other more valued or desired options. Higher mental resource level could give negotiations power to one party, with which the exchange of resources can be controlled.

There can be power-dependent relations between exchangers or chain reaction threats which affect powers within the exchange e.g. another one holds the rights to resources other ones need to be able to operate (Coleman, 1990). Some researchers are showing also evidence about symbolic or status power that alters the subjective valuation (Cropanzano & Mitchell, 2005). Sometimes one with power can force resource exchange, but it is situational and therefore can have many outcomes. (Coleman, 1990, Emerson, 1962). Power at exchange can influence valuation, but it can also be phrased that power can affect on the acceptance level of valuation. Or it effects on the valuation criteria, to be favorable for the party power holding side decides to. If no other influencing factors are on the play, then whoever has more desired resources available at the exchange event has more power over the exchange. (Baldwin, 1978; Blau, 1964).

**Prioritizing**

Resource exchanges are prioritized by a few triggers, if some resource category in general or its important resource type is reaching critical limit, it rises for higher priority. Vital vs Pleasure, which one is more needed in a situation, but normally vital resources are balanced first then pleasure (survival instinct). The main goal, to gain or protect resources is very subjective and situationally dependent, but often protection comes first even in the form of sacrificing lower priority resources to protect higher priority resources. When active protection is not needed, gaining by each exchange is prioritized, it creates reserve which protects the critical limits of resources. Saving can also be efficient for resources, gaining by saving.

**Decision making**

An adult makes 35000 decisions/ day. Based on the evaluation (conscious or subconscious) from information available, a decision towards goal is made. (Hoomans, 2015)

Decision-making cycle is explained in more detail later, but figure 11 illustrates the decision-making cycles in decision-making dimension. Decisions are made at every step, and at every level, not only when the main goal and strategy to reach it is launched . Therefore, it is important that everyone understands their role as a decision maker, it matters in goal-achieving efforts what can be learned from previous decisions and their outcomes (information collecting).

Figure 11 looks very confusing, because of the chain of continuous decisions at every step. The purpose of the confusing figure is to emphasis the overlapping decision-making cycles' presence not as one decision-achievement cycle, but cycle at every action we decide to make to achieve the goal. Decision making can be understood as a dimension which was presented at figure 7.

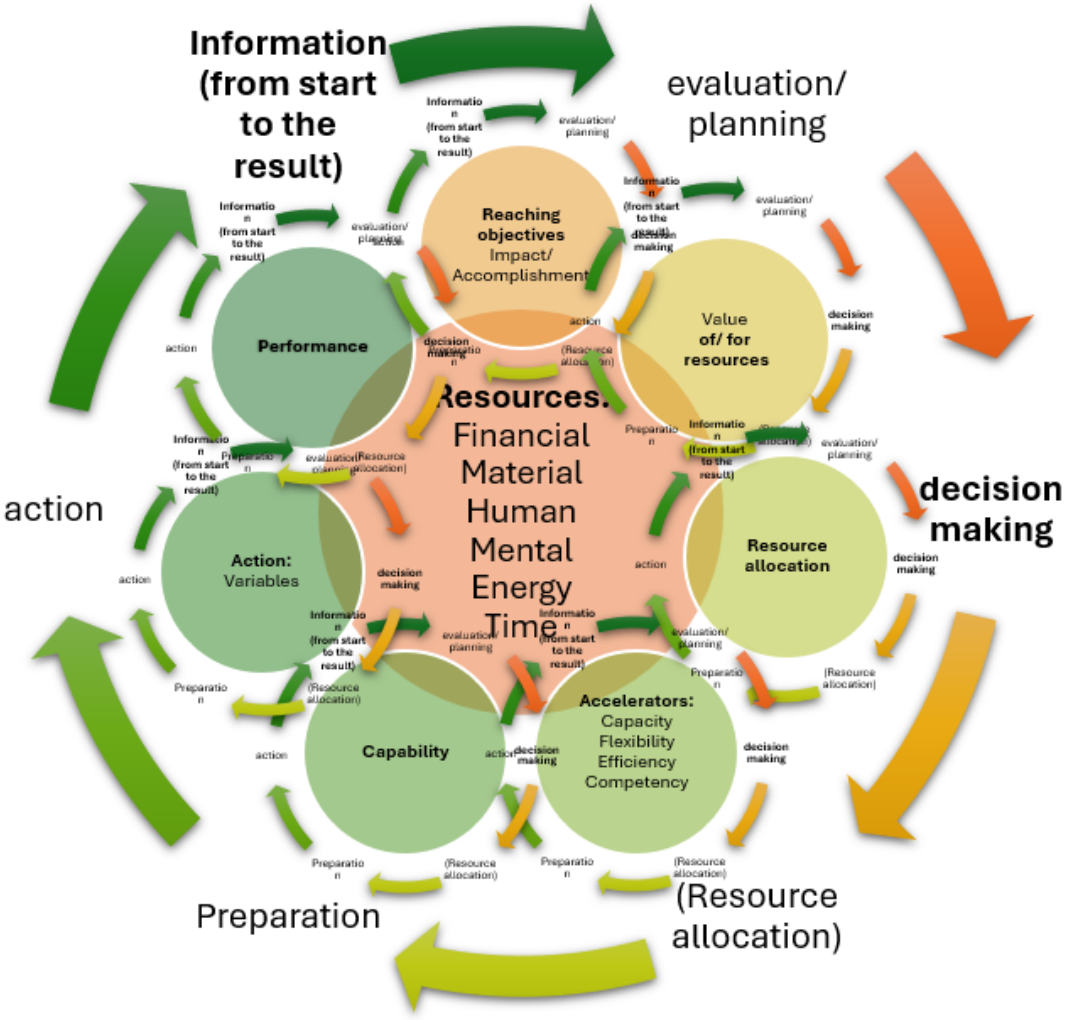


*Figure 11. Decision-Making cycles in Decision-making dimension.*

**Battle of resources**

In this study battle of resources means the found fact in exchange theories that in certain situations resources are consumed from or by competitors (Porter, 2008). One example of consuming or affecting opponents' resources or availability to them could be Universities. They "battle" for their existence against other alternatives by capable teachers with appealing tools and curriculum. They use their resources to attract students to study and graduate, to receive more resources to develop the concept and start the cycle again. Resources are exchanged normally at several stages, but at the same time they are made unavailable to competitors. In war, battle of resources is even more evident, because it is based on formula where aim is to use minimum amount of own resources to tie up or destroy the enemy resources. Whoever loses the resources to the lowest acceptable level will surrender or lose the battle. In some cases, control of resources can shift the power of negotiation and give leverage for controller's advantage (Porter, 2008). Coalitions can be an alternative to alter the power relations of resources (Coleman, 1990), an example of such coalition could be NATO.

**Volunteer or forced exchange of resources**

Difference between volunteer and forced exchange of resources is that in volunteer exchange the valuation and exchange is accepted by exchanging parties or exchange of resources is cancelled, figure 12. In forced exchange of resources, the decision of acceptance of exchange is done one sided and approval from other party/parties is not needed, figure 13. Forced exchange involves the "power at exchange" -element, so that other party have means to force it (Coleman, 1990). Criminal activity is an example of forced exchange of resources, as well as war by the point that what will be exchanged and to what, is maybe known only by sender. It is not always needed to use the forced exchange, but even the threat of using it could shift the power of the exchange event, or to avoid it, military has many examples of this. Defence forces are building the capability to show their force to impose a threat if someone plans an attack. If in war, there are a lot of one-sided forced exchanges, like no-one except a bomb in exchange for a powerplant, but it can happen (it is forced exchange of resources). That might cause energy resources to reach the critical limit, which can cause other than just material or financial resource problems.

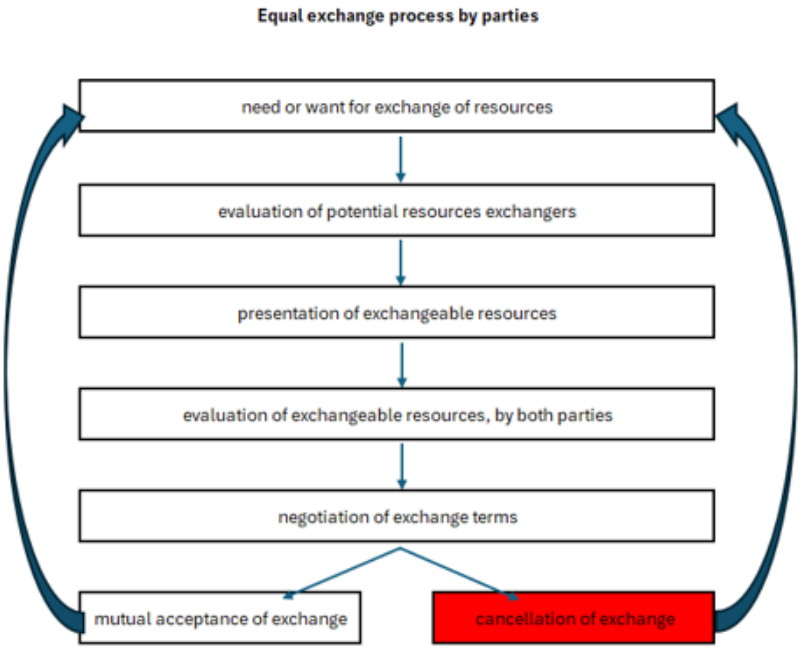


*Figure 12. Voluntary exchange process (equal/ mutual acceptance)*

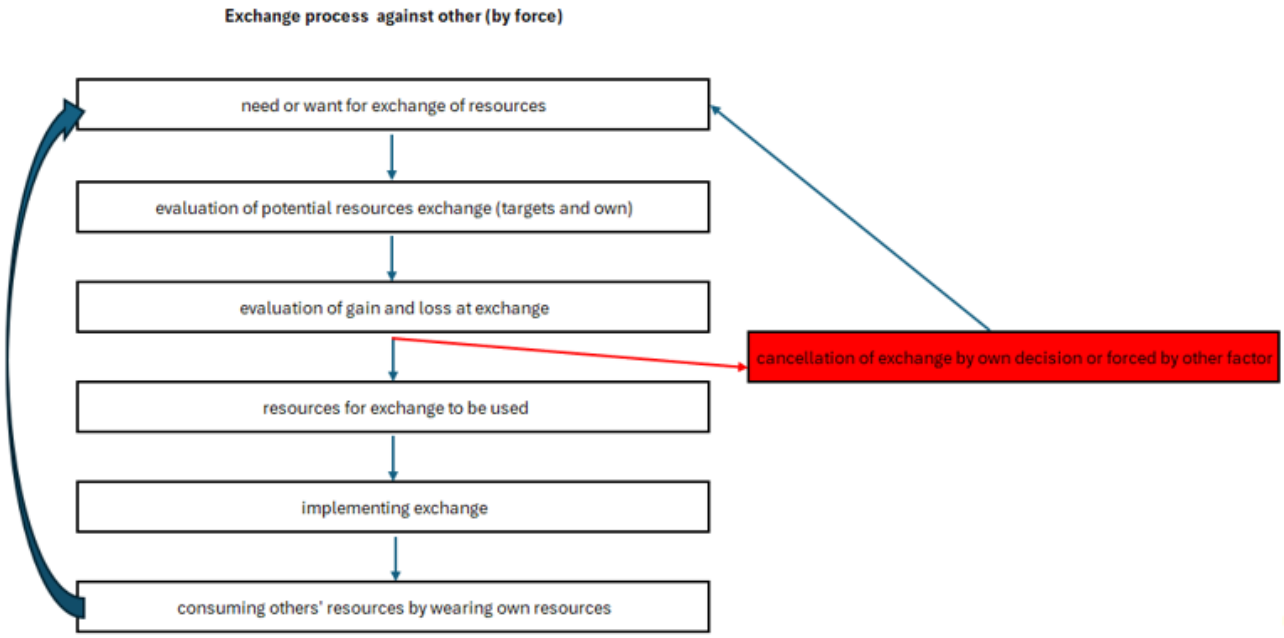


*Figure 13. Forced exchange process (one-sided).*

**Culture**

what is it and how does it affect our decisions at resource exchange? By Merriam-Webster dictionary the definition for culture is following: “the customary beliefs, social forms, and material traits of a racial, religious or social group” (Merriam-Webster, n.d.). Country, state, city, neighborhood,

work, hobby, family, person, scalable culture depending of environment and it is evolving, because environment is evolving. So many variables that we may assume in general, but knowing is difficult. “Morelli and Cunningham (2012) argued that personal values are shaped by cultural values and that personal values affect the value placed on resources” as cited in Halbesleben, et.al., (2014; p. 1340). Halbesleben, et.al continues “As a result, we might expect some overlap between resource value among individuals within a culture, but differences in personal values might explain the variance within a culture” (2014; p. 1340).

**Information**

Information exists in everything and senses work as receivers, *dynamic information dimension* is present all the time. Senses are receiving some form of information from around in all shapes and forms actively or passively. Brain processes the information to gain knowledge and reacts to it or stores it for possible later use. How much is registered and interpreted from that information flow is another thing. (Pérez-Montoro, 2007)

Communication means sending (transmitting) and receiving information. Communication can happen consciously and unconsciously, unintentionally and intentionally, actively or passively. Information is delivered and received by different means with different meanings as a message. Sender should have a message in the form that the content can be understood as intended by the target audience. For reaching goals there are ongoing decision cycles based on information and knowledge, so mental resources are used to find the way to the intended goal. (Fiske, 1990).

Resource exchange can sometimes raise public interest, and the exchange event transmits public information. This could be good or bad for the exchanger or exchangers, but if desired and decided, controlled information can be delivered, which expresses the perspective as the exchangers want. It is usually called PR or marketing. Public information is a strong channel to influence and therefore it should be taken into concern and try to get the advantage of it, so that it will be in favor for the exchanger. Controlled information is easier to shape to the wanted form and content, but it requires more resources and is considered less reliable (hidden agendas), than information received from peers.

**Sustainability**

Resource exchange has a key role in sustainability, by finding better practices to use resources more efficiently. Another perspective for sustainability comes from the active resource exchange model, which takes the socio-cultural aspect into consideration and raises the importance of policy making as well as public opinion, which guides the values what should be done. Model itself is not built over sustainability concept but takes it into consideration as current trend given by customer preferences and guided by law. Subjective valuation at the exchange event is one self-guiding parameter for the level of sustainable actions. Another is the values of the exchanger and how being part of a better future guides the selection of decisions. (Ministry for Foreign Affairs of Finland, n.d.)

# 5 Results

As seen from literature reviews there are several theories and approaches which have developed around resource exchanges. Theories selected for further scrutinizing in this study had two main perspectives, firm and individual. The rest of the development done between theories has been either specifying certain rules of exchange by adding new theories (e.g. effecting valuation of exchange) or focusing on behavioral effects on different exchange situations. This study combines ideas with some process structure from firm perspective to aim for the goal and value, via capabilities. Individual perspective theories are giving some studied facts from reasoning why decisions, choices or behaviors are happening. Also, they give some perspective for subjectivity, equality, conservation and reciprocity to understand how they influence valuation and keep resources reservoirs in balance. It also needs to be understood how availability of resources is affected and value creation changes within the circumstances.

One strong influencing element for subjective valuation is the socio-cultural environment and how it evolves along with time and action. Cultural and political environment creates a framework for public opinion and therefore bases policy and decision makers to guide the accepted use of resources. Flexible and efficient use of resources creates capabilities, which generates performance by action. Performance makes an impact or reaches an accomplishment compared to objective, which will then be compared to used (exchanged) resources. The importance of the objective, reached accomplishment, compared to used resources generates the experienced value. High value can influence available resources and willingness to use them, low value can feel like waste

of resources and resources might be reallocated to other higher value means. Also experienced low value might lead to restructuring of resources for better suiting capabilities to meet the variables in the action phase, which should lead to better performance or more acceptable accomplishment on objective.

This research aimed to create a general view of the resource exchange and make an illustrative model of the functions as well as explain what the key elements and descriptions are. Key definitions found relevant from previous research were explained in chapter 4.

**Active resource exchange process**

Active resource exchange **process** can be understood as a cycle when resource exchanges are done by actively pursuing towards the set goal. Active resource exchange might have "traditional" exchange events like social exchange (between actors), but some of the exchanges might be done with/ against environment when advancing. The following definitions are involved with the journey and previously defined factors are left on general level.

Active resource exchange starts to follow the decision-making cycle: information for goal setting, evaluation (gain as goal and losses as used resources) etc.

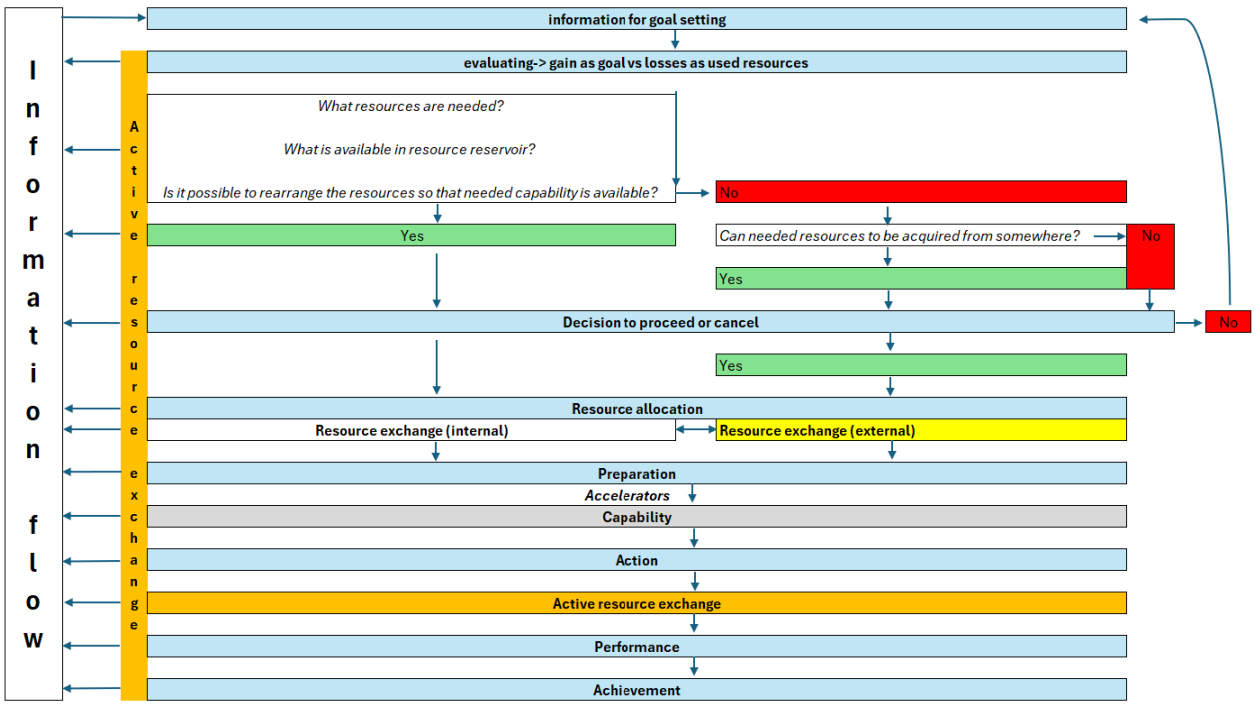


*Figure 14. Active resource exchange process.*

**Capability**

Combined resources are creating capability. Capability is *theoretical performance of resources, and action phase with variables will determine how capability was able to change into performance.* In times when preparing for possible need of performance, which cannot be measured in real life, the assessment of the performance is done by simulations, tests and in theory. This assessment then indicates the possible achievable level of performance and what this capability can impact/ achieve/ influence. This capability readiness can be valued to the best knowledge. This evaluation is used for pre calculations for needs of resources and how gain-loss ratio looks when compared to the importance of achievement.

The valuation process's quality depends on how widely, deeply, and thoroughly all the variables were taken into consideration, while conducting the simulations and/or tests. Poorly conducted / bias valuation processes can give misleading performance results. It is also important to remember that testing and simulation are also resource consuming, so collaboration is preferable. Simple solutions require less testing because they have fewer effecting qualities by variables.

Also, training is considered important to keep up the knowledge and learn to combine skills with other resources. "Capabilities often have the property that they function less well if they are not used. Capabilities incorporate the knowledge of individuals and teams of how to perform a task or set of tasks. Most knowledge that resides within an organization has the property that it is remembered by doing" (Helfat et al., 2007, p. 7).

**Resources**

As a reminder a short description of the main terms involved and what they contain. Resources can be understood and defined in many ways; in this context resources are divided into six main categories by their nature of value in exchange. Resource exchange is often a combination of resources exchanged to combination of other resources; this categorizing allows us to emphasize the valued resource as well as scrutinize how we can affect the resources in positive or negative. Resources are not unlimited even though some of them cannot be measured exactly. Resources can also be treated as capital, which fluctuates by value in time or by circumstances. Different situations require different resources (capital) to be able to reach the value for exchange.

- Financial
- Material
- Human/mental
- Mental/human
- Energy
- Time

**Resource allocation**

Resource allocation means the phase when decision for pursuing the goal is made, the available resource reservoir is taken into concern and the best resource mix for the task is allocated. Needed external acquiring and internal rearrange of resources are done.

**Preparation**

Before action, all the needed resources need to be at the required level and aligned to fulfill the requirements for successful action.

**Accelerators**

Quantity, quality and flexibility, will be working as accelerators for the efficient use of resources.

**Capability**

Capability is mix of capacity and competency of the available resources. Capability can be also described as theoretical performance.

**Action with variables**

Action phase has at least five variables, which can effect on capability transformation into final performance (effect of the 6$^{th}$, *the unknown*, can be minimized with flexibility of the resources as well as how resources can adapt to the unprepared circumstances):

- operational environment
- users
- counter measures (passive/active)
- strategy/ tactics
- duration/ speed

- unknown

These variables can be taken into consideration at certain levels when creating capabilities from resources. The difference between capability and performance depends on how well these variables are known or can be taken into consideration on preparation.

**Action variables defined**

a. ***Operational environment*** is the space where the *capability is in action and transforms to performance* (internal or external). It can vary by the applied situation e.g. it can be in different domains or multi dimensionally in several domains: *ground, sea, air, space, information, cyber* (Tähtinen, 2022, p. 135). These example domains are from military literature but seem to cover most of the general environments and can be applied to other fields of resource exchanges as well. The environment can be controlled to a certain level if enough variables are taken into consideration, but it can still surprise or affect performance, because it can also be dynamic and in constant evolvement. Operational environment can influence resources in many ways and cause causal chain reactions with functioning within resources. Environment can affect the function or the user of the resource to underperform compared to the planned capability. Functional dimensions of the elements (in military) are operative, logistic, social, technological, organizational and informatic. These functional dimensions create weaknesses and strengths for one's own and adversary actions. (Ahvenainen & Korhonen, 2003)

   More concrete are environments such as *ground, sea, air*, *space* and variables within them. Several variables are set by nature: e.g. geographical, terrain and topography (soil, rocky, deserts, fields (open), mountains, forests (covered), salt or fresh water (currents, tides), bodies of water, altitude or depth (pressure). Seasons (climate, weather) with temperature, wind, rain form as water-snow-sand, the amount of light (low light vs high light) etc. Also, the environment can be involved with constructed objects: roads, railways, buildings (restricted space to operate), electricity, vehicles etc. The environment can also be affected by humans (cultural, linguistic, people (masses or individuals). (U.S. Army Training and Doctrine Command, n.d.)

*Information environment* means the information content (misinformation, propaganda), which can be distributed several ways and effects on people by shaping their attitude against the action (transforming capability to performance), can be used as part of counter measure. (U.S. Army Training and Doctrine Command, n.d.)

*Cyber environment* is purely involved with information technology, but all technological equipment can be influenced by cyber actions, by which it can affect the constructed environments (e.g. electric grids, communications, waterworks, fuel/ food supply, transportation or other critical parts of infrastructure). Also, the electromagnetic spectrum can affect the availability or usability of some resources.

Above mentioned operational environment examples of variables might sound too specific, but those are real, possible variables in business life as well. When designing or operating a product, some of these needs to be considered, if the aim is to create value-in-use by performance.

b. ***User*** is variable because of the base, current or changing condition (physical and mental). Education or training can increase predictability, but e.g. physical fatigue can affect mental decision making or ability to use the potential (or learned/ trained skills) under the pressure/ situation. Mental stress (or psychological trauma) can also affect physical capability, which might reduce performance from the actual planned capability. Users can be influenced by experience and information, which might affect the ability to perform at the expected level. (Sinek, 2016)

c. ***Counter measures*** (passive/active) Counter measures are variables, which might be caused by opponent or party, which want to affect the performance. It can be e.g. law related or some other measures (physical, kinetic, psychological, changing the environment, affecting users). In general, the purpose of counter measures is affecting negatively on your resources or variables, directly or indirectly to make your capability lower or disturb the imagined plan to make you underperform compared to the capability. Passive countermeasures can also be e.g. blockage or structures made, which may affect on movement or performance on your used resource. Active countermeasures can be all actively used

measures which affect the environment to continue freely to the objective (e.g. competitor buys common component supplier and priorities own supplies).

d. ***Strategy/ tactics***: How well all the variables were taken into a concern and how resource consuming tactics were selected? “Plans are worthless, but planning is everything.” (Eisenhower 1957). It means that you can plan as well as possible, but in the end, you will face the unknown variables, for which you need to improvise, to generate the best possible performance within the given situation. On the other hand, planning is preparing, so it is always better to have a plan, but to accept the fact that the outcome might be different.

e. ***Duration/ speed:*** Duration, is there a limitation for resource use in time/ repetition, after which the capability cannot be changed to performance (tear & wear)-> operational time? Or does it need to be stopped in certain intervals (how long is the down time for maintenance)?
Is there an operational time for users, before performance starts to go down, is there something which is influencing stamina?
Does it need extra material to work, how they will last and how does it require service of resupply?

*f.* ***Unknown,*** there is always an element which cannot be taken into consideration, and it may affect our ability to transform capability to performance. e.g. pandemics, natural disaster or other milder chain of controlled/ uncontrolled events, which alter the outcome. Sometimes this area of unknown is called a black swan (Hajikazemi et al., 2016).

**Performance**

Word performance is used quite loosely in different contexts to describe the ability to perform, even if it is a measurement of action performed. Ability refers more to being capable of (capability) something. *Performance is a measured outcome of capability used in action*. As explained before there are action variables between capability and performance, therefore in this study performance is only measurable at action (current performance) or after (achieved performance). Performance is also evaluated in several ways, as total achievement compared to the goal set (all resources involved). And compared to the achievement with used capability with consideration of

the difficulty level (smaller unit evaluation). Considered difficulty level is planned and used capability compared to the action variables. This can give the underperformance, overperformance, as expected performance results. Some machinery performance figures are given (this study suggests that it is referred to as capability), but they are measured in certain conditions by given standards. Testing with standardized conditions gives good reference point to compare different things, but it does not tell the performance in real life, only what it is capable of in set circumstances and monitored variables. If the action happens in a very controlled environment, with minimal amount of variables and repeatable functions, like in laboratory or some factories, measured capability can be very close to the actual performance (Hasegan et al., 2018). On the other end of spectrum e.g. racecar capability can be given as in the best possible scenario, but actual performance can be measured during and after the race day results are in use. Performance (capability in action) is consuming resources in exchange for achieving the goal set.

**Achievement**

When objective or goal is set the intend is to achieve it. Achievement can vary from the original goal, depending on how well capabilities were able to overcome the variables in action or how well planning was done. Wrong strategy, tactics, capabilities or overlooked variables may shift the outcome from original plan. Achievement gives the possibility to measure the performance of the resources used.

**Evaluation to valuation**

After achievement, it is time to evaluate the outcome so that the achievement or impact is compared to the used resources. Valuation can be done when level and importance of the achievement have been acknowledged and compared to the resources used. This creates information which can be used for further decision making and resource allocation for resources reorganization.

## 5.1 Introduction of the created model

Resource exchange based model created in this study is constructed from three main sections, which will be presented as individual layers with their content in separate sub chapters. After presenting these three layers and how they can be related to real-life scenario, they are combined in sub chapter 5.1.4. as a full *active resource exchange model (AREM)*.

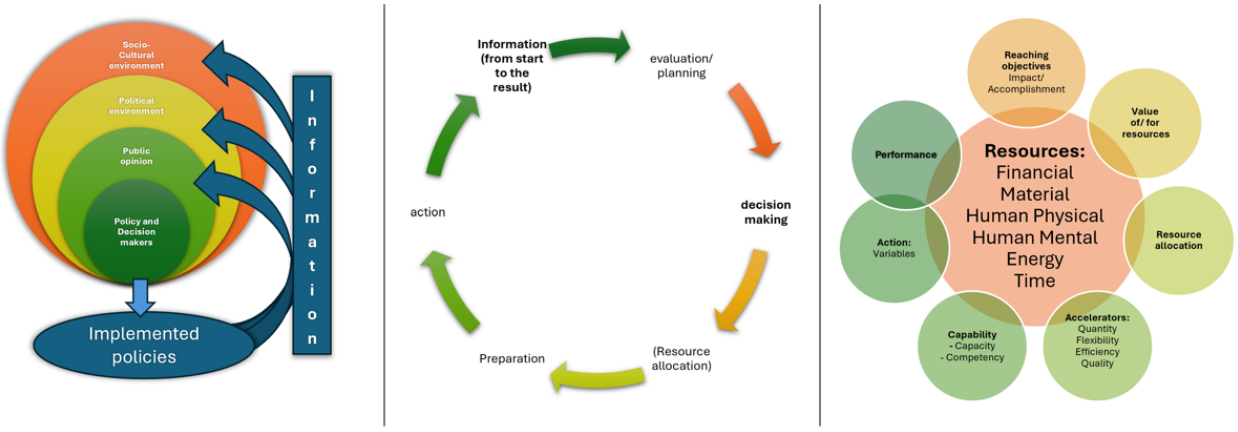


*Figure 15. Illustration of upcoming sub chapters: Societal influence, decision-making cycle and cycle of active resource exchange.*

### 5.1.1 Layer one: societal influence on decision-making and resource exchange

Example of functioning model and how it scales from individual to societal level:
Society is “a particular community of people who share the same customs, laws, etc.” (Oxford University Press, n.d.), is sharing cultural environment, which favors certain political environment. Public opinion is shaped by individuals, living in a society which is affected by socio-cultural and political environment. Policymakers are selected by accepted lawful method (in many western cultures by vote in elections). These policy makers are making laws which ensure a functioning society, and decision makers must take these policies into consideration when making decisions. Implemented policies affect publics life and shift back by shaping the cultural and political environment, which causes re-evaluation in public opinion and evolves the wants/ needs of society. Future policy makers can be seen in the next elections, which then shapes again the next cycle of evolving. Next, 5 elements of the societal influence on decision-making and resource exchange are described as one result of this study. For the ease of the reader elements and their relations are presented in figure 16, before the descriptions.

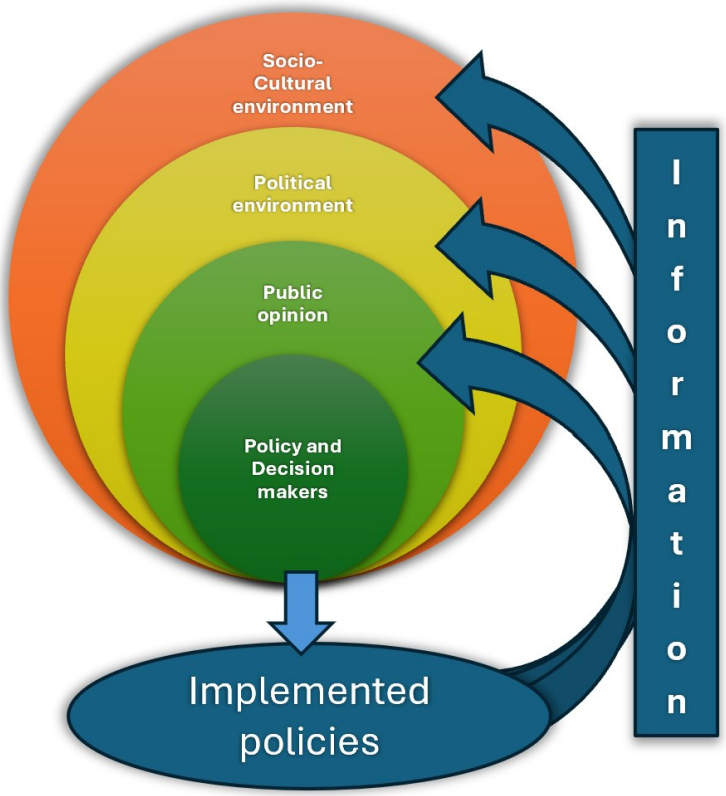


*Figure 16. Layer one: societal influence on decision-making and resource exchange.*

**Socio-Cultural Environment**: The prevailing cultural values, norms, and beliefs shape the collective mindset of a society. This includes attitudes towards authority, individual rights, social responsibilities, and more.

1. **Political Environment:** Policymakers operate within this cultural context. Cultural values influence political ideologies and the platforms of political parties. For example, a culture that values environmental conservation will likely support policies promoting sustainability.

2. **Public Opinion:** Public opinion is shaped by both cultural values and political discourse. Media, social networks, and public debates reflect and amplify these influences, creating a feedback loop. Public opinion, in turn, pressures policymakers to align their decisions with the values and preferences of their constituents.

3. **Policy and Decision Making:** Policymakers and decision-makers are responsive to public opinion because it affects their legitimacy and chances of re-election. They craft policies that resonate with cultural values and address the concerns highlighted by public opinion.

4. **Feedback Loop:** Once policies are implemented, they further influence the cultural and political environment, potentially shifting public opinion again. This continuous loop ensures that policies evolve with changing societal values and preferences.

   Public information from decisions and results are affecting the dynamics of these elements, and they may influence the next decisions to be made in favor or against.

### 5.1.2 Layer two: active resource exchange with decision-making dimension

Since decision makers are part of society, implemented policies are making the ground rules what can be lawfully or generally accepted decisions within that society. Decision making is done on any level, governmental, organizational, company or individual. Based on set ground rules from society, which can evolve by time, decision making needs the goal what to aim for. Information, what is the objective or expected value on future exchange of resources starts the evaluation and planning process for the action. When the preliminary plan is accepted, the decision of resource allocation needs to be made. What resources are available, what resources are needed, what resources can be acquired (exchanged), what/how accelerators can be utilized and what level of capability can be built? What is the strategy or tactic to obtain the wanted goal with planned mixture of resources and how the action variables would affect on the future performance. This preparation phase might alter the preliminary plan when new information of usable capabilities and action variables are considered. Re-evaluation, decision and resources allocation are made again to redefine the needs of resources for successful implementation. Preparation is already wearing the resources so it should be appropriate to the level of usable resources and importance of the objective. Passive capability is exchanged in action to performance for reaching objective. Then received information from the result is evaluated and it is measured as *under performance*, *expected performance* or *over performance.* Measuring the performance level also the following factors need to be taken into consideration: reached accomplishments compared to the actions done (used resources) and what action variables were affecting it (how plan worked in real situation). The level of performance can be measured as a whole (what was achieved compared to what was the objective) and/or in smaller portions by different resources or each action variable affecting

the result. Evaluating the information of reached objective- and performance level with the importance of the achievement with exchanged (used) resources creates the reached value of the achievement/ exchanged resources. Received value gives the decision maker the possibility to re-evaluate if similar transactions with resources should be done or should the use of resources be reconsidered differently for better value.

Sometimes information of the results of exchanged resources are publicly available and can cause strong public opinion to force decision makers to change plan for the next exchange. Decision makers receive more detailed information of the end result and they can give *controlled information* to the public, with which the may alter the message public information was serving. The full picture of the process at p. 60, figure 19.

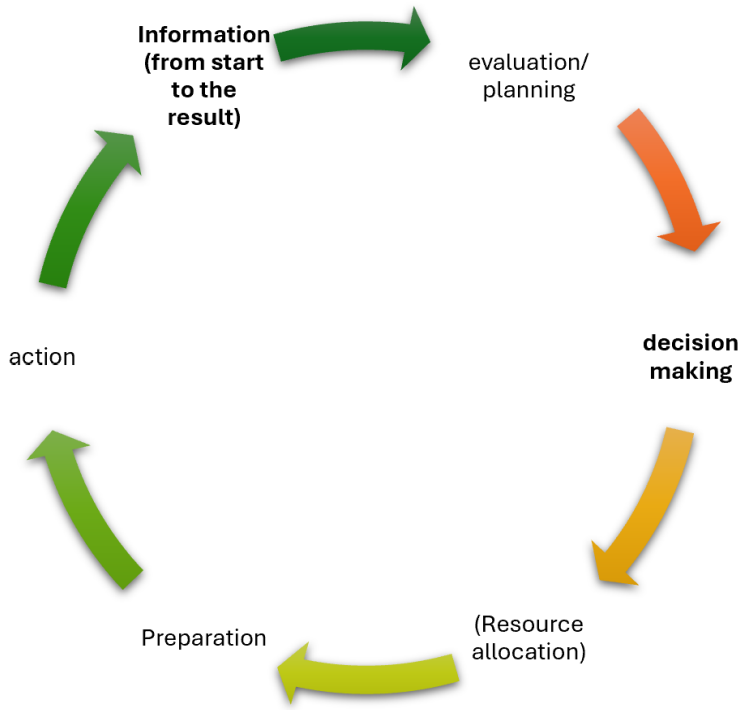


*Figure 17. Layer two: decision-making cycle.*

Layer two, the decision-making cycle in this form is considered as another result of this study. It has six phases, and each phase will be explained in more detail next.

1. **Information Gathering**: This initial phase involves collecting relevant data and insights. The goal is to understand the context, identify the need and problem, as well as gather all

necessary information to make an informed decision. This can include research, observations, intelligence, consultations and initial (conditional) goal to fulfill need.

2. **Evaluation/Planning**: In this phase, the gathered information is analyzed and evaluated. Different options and strategies are considered, and a plan is formulated. This involves assessing the pros and cons of each option, forecasting potential outcomes, and determining the best course of action.

3. **Decision Making**: Based on the evaluation, a decision is made. This step involves selecting the most viable option from the alternatives considered. It requires weighing the benefits and risks and making a choice that aligns with the overall goals and objectives.

4. **Resource Allocation:** Assigning the required resources to implement decision: What is the competence and capacity of needed resources? What resources are available? Can some resources be acquired and/or is it needed?

5. **Preparation**: Once a decision is made, the next step is to prepare for implementation. This includes organizing resources, assigning tasks, and setting timelines. Preparation ensures that everything is in place for the action phase.

6. **Action**: The final phase involves executing the plan. This is where the decision is put into practice. It requires coordination, monitoring, and adjustments as needed to ensure the desired outcome is achieved.

Information is collected, processed and passed all the time. This information is compared to the information from the result, which can be then evaluated. This cycle is iterative, meaning that after the action phase, the results are reviewed, and the cycle may begin again to refine and improve future decisions. This continuous loop helps in adapting to new information and changing circumstances.

### 5.1.3 Layer three: action dimension and cycle of active resource exchange


*Figure 18. Layer three: cycle of active resource exchange with significant phases.*

Layer three contains the resources and shows the seven significant phases at active resource exchange cycle.

1. **Resource allocation**: What resources are needed, what is available and what can be acquired.

2. **Accelerators**: Accelerators alter the use of resources more affectively. *Quantity* of the resources, *flexibility* (how resources can adapt to the variables), *efficiency* (how efficiently resources can be used), *quality* (e.g., capacity and competency of the resources)

3. **Capability**: Capability is the theoretical performance of resources. Capability is a combination of capacity and competency from mix of the resources, which can be accelerated with flexibility and efficiency.

4. **Action**: Capability is transformed to performance by action. Action phase can have a lot of *variables*, which might affect the end performance.

- operational environment
- users
- counter measures (passive/active)
- strategy/ tactics
- duration/ speed
- unknown

5. **Performance**: Measured outcome of capability used in action.

6. **Impact/ Accomplishment:** How objectives or goals were reached by used performance.

7. **Value:** How highly appreciated objective was and how well it was accomplished compared to the used (exchanged) resources.

After evaluating the gained value, new decisions of resource use can be made.
Resource value, competence or capacity, might increase or decrease over time.

### 5.1.4 Active resource exchange model (AREM) with all layers and dimensions

Visualized model of the variables influencing decision-making and value creation, in the loop of resources exchange for capability and performance. Dynamic information dimension covers the whole process as infinit flow of knowledge and decision-making dimension is present at all phases. Each phase has its own factors of influence and variables, so with this model, the future can still not be fully predictable, but by modelled process, it can be better prepared and give the advantage to win in the battle of resources. Figure 19 shows all the elements of three layers in their dimensions at AREM and can be found in bigger version at the appendices. In discussion chapter 6, AREM is presented as simplified version in Venn diagram as Figure 20.

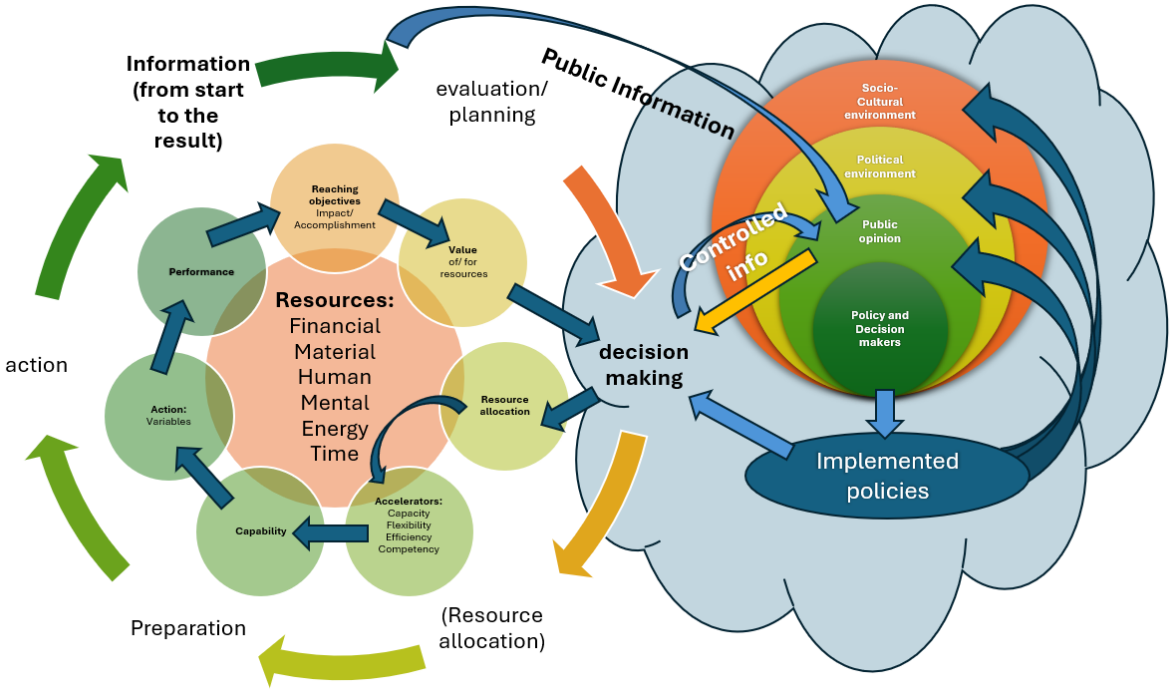


*Figure 19: AREM as combined picture of all layers on dimensions.*

In this figure all the components presented in chapters 5.1.1-5.1.3 are combined to illustrate the simultaneous functions at all dimensions. To understand the point of decision-making "centralizing" (in the middle of the figure) in illustration, a few things need to be remembered. Decision-making is part of big goal setting as well as small goals and all the required decisions in between. Illustration can be seen scalable, so it would follow even to the smallest decisions for active resource exchange, with the same structure. Big decisions are made, so that the small decisions can implement the big decision requirements. Active resource exchange makes decisions about resource gaining and protecting for best possible result- used resources ratio. To be able to master that, it requires continuous communication and information for reallocation and preparation.

Sometimes the resource exchanges reach level that the outcome of resources use will be uncontrolled public information. That is why responsible decision maker uses controlled information channels to pass message with content in form which is maybe more favorable (PR or marketing). This way the feedback from public opinion is easier to control, and reallocation of resources can continue for the next goal.

Strategic plan to achieve a goal require all these elements and it will face variables, which will be managed by tactics. The level of performance is dependent on how well every part of the active resource exchange will manage in the dynamic operational environment.

# 6 Discussion

This study present and aligns a model for understanding the functions of why plans are not reaching the wanted goal and at which stages can these influencing variables alter the outcome. Chapter 6.1 will give a short introduction to resource exchange and answers for the research questions. Chapter 6.2 presents implications for managerial use and how this research could be applied into real life. The active resource exchange model (AREM) as presented in more detail in chapter 5 was developed in this study. Chapter 6.3 presents how theory and practice engage as simplified Venn diagram of the AREM. Research reliability, limitations and ethics are presented in chapter 6.4. Finally, chapter 6.5 will have suggestions for future research.

## 6.1 Resource exchange, the core to build on

Resource exchange is an everyday event, but terminology about the same transactions is different and the relations might be hard to realize. When translating everything into “exchange terminology”, the everyday actions are easier to notice, and active resource exchange starts make more sense. It is like changing to a universal language, which is easier to understand. Multi dimension model with huge amount of variables feels overwhelming at start, but structuring helps to filter the unaffecting variables on side and the meaningful core is more comprehensive.

The resource questions for the study were searching for answers for current perspectives of resource exchange and are there some views which have less or no attention.

a) What resource exchange happens between interpersonal resource exchanges?
b) How can resource consumption in action be described in current exchange theories?
c) Can active resource exchange describe the exchanges at multiple levels?

Main characteristics for interpersonal resource exchange are subjectively valued exchanges between individuals, resources can be material and immaterial and they create a great base for equal resource exchange in volunteer conditions. Reciprocity and equity are felt important at the interpersonal exchange, which are present at all times. Valuation was found as a “black box” of social exchange, since the actual exchange process is not well researched, and subjectivity increases the variables. Interpersonal exchange can be fit to the class seen at the far-right column at Table 5

(marked with red square). Between interpersonal exchanges there are a lot of different situations and forms of exchanges. Exchange events can be divided into two: *internal* and *external exchanges* (marked with yellow at Table 5). Events are divided into four by object of exchange (marked with blue at Table 5). Each of these four might also have differences by exchange -decision, -method or -reason.

*Table 5. Classification answers resource questions.*

| Active resource exchange situations | | | | |
|---|---|---|---|---|
| **exchange event** | **Internal exchange** | **External exchange** | | |
| **exchange object** | alone | with nature | others objects / partners | with partner (s) |
| **exchange decision** | personal | one-sided | one-sided/ forced | mutual/ volunteer |
| **exchange method** | Balancing resources | give and/or take | give and/or take | give and/or take |
| **exchange reason** | internal reallocation and consumption | gain and/or protect resources | gain and/or protect resources | gain and/or protect resources |

Resource consumption in action was not found as a research topic at the reviewed theories. The individual perspective theories are researching the interaction within the exchange between people, so resource exchange against environment or consumption alone was not found. Some of the firm perspective theories acknowledge the action variables existence and reinforce the structure of active resource exchange, but theories concentrate on finding the solutions to be ready for variables, which might influence the performance. This research raised a view of exchange situations which can be also seen as resources consumption in action (Table 5). As internal consumption for defending the levels of resources. With nature, when using resources within action to gain or protect resources. One-sided/ forced exchange, e.g. travelling with own vehicle, needs energy resources in exchange for movement. Resources consumed by action can also be done together with partner in the form of combining the resources for consumption.

The active resource exchange model was designed to explain the different level exchange events and the main phases what can influence the intention for reaching the goal. Active resource exchange describes the moments when exchanged resources are consumed in some form and consuming became the exchange event. Model is presented in three dimensions or layers, information floats as a dynamic element among everything what happens. The second, constant decision-making dimension is floating along with information, because decision-making is

knowledge (conscious or unconscious), and it is based on available information. The third dimension is the act/ action level which follows the decisions made, for the required resource exchange. Every exchange will generate information which is communicated, so that it can be taken into consideration at the next decision.

## 6.2 Managerial implications

When looking at life through resource exchange lenses, it can open views by simplifying every transaction from money for material or service to wider concepts. Wider concepts can include business opportunities others cannot see, can the vision of transaction be more flexible and offer more options for the exchange. The model (AREM) works as a map to remind the phases which should be taken into consideration in the plan and resource allocation. Also, study brought up some themes and factors which will influence the valuation at exchange, but at the same time action variables should be taken into consideration, to have maximum value after consuming the resources.

Research also sliced the AREM into smaller portions, which are describing the process in separated sub-processes. This will give possibility to study the phenomena in parts for easier interpretation of each dimension. All separate subprocess steps can make some of the everyday challenges easier to understand and communicate.

Some takeaways from the study:

- Goal is always about gaining or protecting resources.
- Resources are the base for every action that can be made (tangible or intangible).
- Resources are the building blocks of life.
- Exchange is always equal (worth for both), because it is balanced with all resource benefits for short and long-time need.
- Resources exchanges are made to gain and protect resources.
- Resource exchange can be done internally (internal reallocation), externally (one sided exchange with environment or material) and with exchange partner (volunteer or forced).
- Decisions are made by valuation process; prioritizing wants and needs in time and place.
- Valuation depends on many things such as time, circumstance, priority.

- Socio-cultural influence on decision-making, rules and values.
- Dimensions: action level, decision level and information level.
- Information received/ gathered, processed, learned and transformed into best plan to exchange resources.

Basically, resource exchanges are reorganizing the resources, creating capabilities (internal exchange) or by inquiring (external exchange) to be ready to gain resources (to be prepared and being able to function) and defend possessed resources.

All this is driven by needs and wants, influenced by operational environment. Defending means that gained position with resources is under constant development and protection against any threat for losing them. Because everyone is in the same situation it creates a dynamic environment with constant decision-making about the best scenario of resource exchange for the present and for the future. Exchanges happen all the time, but to know; what, where, when, how and why makes good great. The best scenario is hard to know without a communication and information flow.

## 6.3 Theory and practice

Existing literature brings up very good peer reviewed information of very concentrated topics which can be used as complementing parts of this model (AREM). Model was created to give overall perspective for the phenomena, in which all reviewed theories give more detailed reasoning of the specific event with selected factors within the model. Therefore, the spirit of the AREM is aligned with all theories in some interpretations, but the perspective required some redefining to be able to cover different theories under one model. Structural similarities can be found separately, but research did not find a model which would combine the elements in the shown level. Research did not find a study, which findings would prove the designed model to have faulty assumptions on structure.


*Figure 20. Simplified AREM with dimensions presented in Venn diagram.*

Diagram has the *gain and protect* (goal) in the center as the core of resource exchange. Dimensions and resources represent the main elements with which everything else is connected.

Dynamic information dimension has *socio-cultural influence*, which reflects to all information, as well as to *decision-making* in *strategic planning* and *evaluation* and *valuation*. The *operational environment* is the space where all the action will happen. *Active resource exchange* connects resources to decision-making with *resource allocation* to build *capability*. Capability with *action variables* creates measurable *performance*, which connects to **goal**. During the action, performance creates *communication* for dynamic information dimension for learning from past as well as to evaluate and value the performance for further resource allocation. Information dimension search for answers ***why*** things are or should be done. Action dimension's operational environment covers ***where*** it is done or happening. Decision-making needs all available information, to finally transform it into the decision about ***who*** will do it ***and what*** will be done, ***with what***. Resources create capabilities and determine ***how*** it is done.

Structure of AREM allows it to scale from understanding individual exchange decisions to structure of larger resource exchange projects. When unit size changes larger there will be more variables and decision-makers to utilize AREM simultaneously, but the same structure is replicated.

*Table 6. AREM resources and action variables.*

| Resources | Action variables |
|---|---|
| · Financial<br>· Material<br>· Human/physical<br>· Mental/psychological<br>· Energy<br>· Time | · Operational environment<br>· Users<br>· Counter measures (passive/active)<br>· Strategy/ Tactics<br>· Duration/ Speed<br>· Unknown |

## 6.4 Reliability, limitations and ethics

This research is conducted mainly following the principles of grounded theory and supported by integrative literature review with research integrity.

The results presented in this research are based on model (AREM) created and compared with the findings from earlier studies. Because of the structure of the model, which is presenting resource exchange with influencing variables at general level was not tested as a theory. Model's reliability is based on reviewed theories (15) related to the context, which did not indicate anything which would be against the general model. The differences with the AREM and reviewed theories originate from the fact that they were defined very precisely to function in the limited function they were designed to study. It did not rule them out, instead they gave very specific information from smaller phenomena, which can occur in the AREM process. It could also be described that AREM is a map with zoom function, but reviewed theories can serve blueprints to the houses, they both serve a different purpose and cannot be equalized by methodology of research.

The search method was not always very systematic, because of the time restriction, but it is not known that some significant research from this field of study would be missing, because of method used. The field studied was interdisciplinary with strong influences from psychology and

there were some main databases which were not accessible. It is recommended that the licenses for different psychological databases would be more available. As seen in this research human is still the key function and it would be good for students to be able to widen the perspective to e.g. consumer behavior with recent researches.

In this type of research, it must be acknowledged that there is a risk for a subjective favoring of the articles, which support the researcher's view. In this work risk control is done by presenting the most significant theories of the field as they are and the differences to the research's groundings will be seen in results or opinions are clearly pointed out. Objectivity in this research can also be seen, for example how socio-cultural influences are taken into consideration. It leaves the possibility for different socio-cultural environments, which gives the model an opportunity for adapting to different scenarios without researcher's bias view.

Ethics in this research were not an issue from confidentiality point of view, because there were no interviews or other confidential data. But of course, it must be taken into consideration that with more time and more systematic reviews, there could have been some theory which would make the shown AREM even more correct or better. When creating a new model, it may take some time away from the traditional academic methods, but yet nothing to jeopardize the research integrity has not risen.

## 6.5 Recommendations for future research

AREM enables identifying notable influencing factors at information gathering and preparations for strategic planning. AREM is also a map for exploring the different and new aspects of resource exchange from different directions. AREM is also new, so it needs a lot of further research and testing for validity in different scenarios, therefore there can be many paths to study. With its general nature, there could also be many levels and directions to test the validity.

Active resource exchange situations (Table 3) suggest that different forms of external resource exchanges are made to gain resources for internal consumption or for gaining better resources for the next external exchange. Several questions are still unanswered. Is all that for creating protection for resources possessed? Can that be the main purpose and all the "pleasure" resources are

gained to enjoy the process? ***And most importantly, can these chains of events be described and validated by further research? How can AREM help with it?***

In order to find if AREM really is adaptable for the purposes described in this study, ***it would be interesting to examine if current events (union strikes, demonstrations etc.) can be recognized/identified using AREM?*** Could found structures be used for predicting similar future events? E.g. When watching or reading current news, can these observations be structured with AREM and if so, how these events are linked with resource exchange core goal (gain and protect resources)?

To validate AREM it would also be needed to examine empirically, ***if AREM supports recognizing variables related to capability transformation to performance and if, how could this be measured?*** Active resource exchange recognizes action variables between capability and performance. How can AREM be used to help with strategic planning if variables can be recognized and measured?

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