



Strategies to Increase Customer Value in Agile Software Development

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Abstract. Nowadays, the software industry is widely applying agile methods. However, while agile principles emphasize the development of software that delivers “customer value” as a key determinant to success in new products and service designs, there are still a few studies that demonstrate how this occurs in practice. In this study, strategies to increase customer value are discussed in literature, especially in the context of Agile Software Development. The results of systematic literature review were validated and added to an industrial inventory. Based on these investigations, 15 strategies to increase customer value have been identified and detailed at the level of approaches, techniques, tools and metrics. The results obtained reinforce the complexity and the need for new empirical studies on the subject, mainly to investigate the key success factors and main challenges for the adoption of these strategies, as well as the positive and negative impacts caused by their implementations in practice.

Keywords: Agile methods · Customer value · Product development

1 Introduction

In the first principle of the Agile Manifesto [1], which represents the fundamental milestone of Agile Software Development (ASD), it is possible to observe the priority given to customer satisfaction through the early and continuous delivery of “valuable software” [2]. Likewise, the Lean Thinking principles, which originated at Toyota and influenced the ASD, point out the need to increase customer value, eliminating the waste of conducting activities or processes that do not generate value [3].

The concept of “value” is referenced in literature as complex, difficult to understand, conceptualize and model [4, 5]. It has different meanings in specific contexts and there are many ways of describing it [6]. Neither is it a static concept, but it evolves constantly and is influenced by the experiences and needs of customers. Despite these challenges, a deeper view of how value is perceived and created would allow these processes to be more effective [7, 8]. The customer value takes into account the perspective of a company’s customers, considering what they want and believe to acquire by buying and using a product or service [9].

The primary goal of any business organization is to create customer value. Delivering this value and maintaining the flow of customer value in a sustainable and ever-growing form has been the focus and need of most companies worldwide [10] - including in the software industry [11]. However, the challenges of the practical

application of strategies to increase customer value are currently present in the development of software with low value and underutilized products [12]. Research has reported, in the context of the introduction of agile methods, in the early 2000s that 64% of user-requested features in internal software development projects (non-commercial products) were never, or rarely, used [13]. In some more recent case studies, wastes of up to 50% of developers' time with activities that did not generate any customer value and the development of functions that were not necessary or of little customer value were identified [14]. In addition, decision-making about which software products are to be implemented in companies are often based on ineffective criteria, such as personal opinion of members of executive committees or influenced by the person with the highest salary [15]. In ASD, despite the priority given to the construction of software delivered by customer value, the agile development processes do not contemplate any specific strategy to follow the delivery results of customer value, allowing each team to choose whether or not to adopt any given strategies to achieve this goal.

Many studies have been published in recent years related to ASD, but their contributions address specific or comparative agile methods with other development processes [16]. However, few studies have been devoted to understanding the concept of customer value in a comprehensive and detailed way in software development [17, 18]. The studies have not yet identified which strategies are used to increase customer value among software development companies that adopt ASD, they only mention the creation of value ASD brings [18]. However, somehow these companies have been practicing and pursuing strategies to extract the maximum possible value from their products and services to their customers, in order to continue existing in an environment of constant market changes and global competition [19].

The research reported in this article was carried out in order to accumulate current knowledge about several strategies to increase customer value in the context of ASD and to identify themes for future research. The question of research (QR) addressed in this work is: *How are the strategies currently practiced in the software market to increase customer value in ASD?* The QR was detailed in three other questions:

- QR1: What are the main characteristics of the strategies to increase the customer value considered by agile software development teams?
- QR2: What are the main approaches, techniques and tools used by agile teams to maximize customer value?
- QR3: What are the customer value metrics in use by agile teams?

The study focused on two main cores: an extensive literature analysis and an industrial inventory. One of the main objectives of the literature analysis was to discover the theoretical models and strategies to increase customer value in software industry. The results of the literature review were systematically evaluated, synthesized and presented [20]. The industrial inventory was based on experience reports presented at the main agile global conferences provided by the Agile Alliance¹. Thus, the study

¹ A global non-profit organization, founded by some of the consignees of the Agile Manifesto as well as some additional people, promoter of international agile conferences and supporter of several initiatives of the agile communities. Website at: <http://www.agilealliance.org>.

provides extensive knowledge about what the academic (research) is proposing and the current state of these strategies in the industry.

This paper was organized as follows: Sect. 2 is a summary of the main theoretical interpretations for customer value present in literature; in Sect. 3, the research setting is described; Sect. 4 presents the outcomes of the literature analysis and industrial inventory; Finally, in Sect. 5, the results of this study as well as its limitations are discussed.

2 Models of Customer Value

The value management literature organizes the concept of value into two main categories: customer value and stakeholder value [21]. The customer value takes into account the perspective of a company's customers, considering what they want and believe to acquire by buying and using a product or service [9]. The concept of value to stakeholders analyzes the value created by a product or service beyond the limit of the business-to-customer relationship and may also consider: suppliers, shareholders, employees, regulatory agencies and many other stakeholders. These multiple perspectives added to the customer's vision can be analyzed to increase the delivered value [9]. However, the focus on customer value is pointed out as primary and a priority to all stakeholders, since it is the basic premise for developing and maintaining a new product or service [22, 23]. The customer value is the source of all other values [9, 24].

The work of [9], depicted in Fig. 1, synthesizes the theoretical customer value models in three main groups: *value components models* (VCM), *benefit-cost ratio models* (BCM) and *means-ends models* (MEM). In VCM, the main elements used in value studies, according to [25], are classified as follows: value of endearment or "desire", value of exchange and utility value. The author states that each decision to purchase products or services includes one of these values cited, or a combination of all these elements. The estimated value invokes the buyer's desire to own because of the property (exchange value) and the exchange value explains why the product interests the buyer, how and when the buyer will use the product (utility value). The utility value describes the performance and physical characteristics of the product. In VCM, the emphasis of the customer value is on the functions and features that a product or service can offer. An example of VCM known in literature is the Kano Model [26].

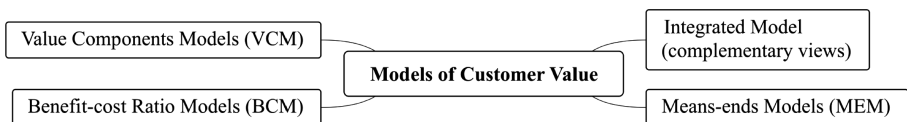


Fig. 1. Theoretical models of CV identified as [9].

In BCM, customer value is defined as the difference between the customer perceptions of benefits received and sacrifices incurred in [27]. Customer benefits include

tangible and intangible attributes of the product or service offering, and the sacrifice component includes both monetary and non-monetary factors, such as the time and effort required to acquire and use the product [9], for example. Similarly, [28] defines customer value as the relationship between customer satisfaction and the resources needed to satisfy it. These needs are many and diverse, and a balance is needed between their satisfaction and the resources invested. The fewer the resource used or the greater the satisfaction of the need, the greater the value.

MEMs are based on the assumption that customers acquire and use products or services to achieve favorable ends. This view is prevalent in consumer behavior literature, in particular, in which customer value is defined in terms of personal values, mental images or cognitive representations underlying clients' needs and goals [29]. In MEM theory, according to [27], the links between product attributes, the consequences produced by consumption and the personal values of consumers underlie their decision-making processes. Means are products or services, and ends are personal values considered important to consumers. In MEMs, a product or service represents "a complex set of value satisfactions" for buyers, who attribute value to the product or service according to the perceived ability to meet their needs [30]. Another important point of interpretation in the MEM is that the customer value that matters most is the value in the customer's experience and not the value in the product [31–33]. Several researchers argue that the resulting customer experience is the essence of value proposition [34].

In addition to the three fundamental groups of customer value models, which have been described by [9], there are at least three complementary viewpoints from which customer value might be interpreted, namely: the value exchange model [35], the value buildup model [36, 37] and the dynamics of customer value [38]. None of these different complementary views is able to reflect the richness and complexity of the customer value itself, so [9] propose a integrated model of these complementary groupings in order to give more freedom in the bid value decision.

3 Research Setting

The processes of literature analysis and industrial inventory were based on the guidelines of [20] for performing systematic literature review (SLR), with two researchers conducting these processes. A review protocol was designed to guide the work and consists of three phases: (I) review planning in which objectives were established and the review protocol was designed; (II) execution of literature analysis, or industrial inventory; (III) reports on the results. The sections below describe the search settings during the first two phases of the protocol, focused on SLR planning and execution.

3.1 Literature Analysis

The literature analysis study presented here is focused on bringing together current knowledge on strategies to increase customer value in the context of the ASD.

To ensure the relevance and validity of the results, research was carried out in studies published during the years 2012–2017. The search was conducted using six electronic multidisciplinary databases specialized in the field of computer science and business administration: ABI/Inform (ProQuest), Academic Search Premier (EBSCO), Emerald Journals (Emerald), Science Direct (Elsevier), ACM, and IEEE Xplore. Table 1 shows the search terms and electronic databases used in the literature analysis. Key words related to customer value were used: value creation, business value and customer value. In terms of the search we chose to execute two search strings, one that used a generic term for ASD (“agile”) and another containing the specific variations of the main agile methods such as “scrum” and “extreme programming”. The term “lean” was applied and considered as an option of variation of agile method in order to cover possible differences of theoretical interpretation between Lean Software Development and ASD [39, 40]. We did not search for studies such as prefaces, article summaries, general presentations, interviews, short articles, special presentations or tutorials: these were excluded from the analysis.

Table 1. Search terms and databases for SLR.

Termos de Busca	Base de Dados
('value creation' OR 'business value' OR 'customer value') AND (agile AND 'software development')	ABI/Inform (ProQuest)
	Academic Search Premier (EBSCO)
('value creation' OR 'business value' OR 'customer value') AND ('scrum' OR 'extreme programming' OR 'lean' OR 'crystal' OR 'feature driven development' OR 'dynamic systems development' OR 'adaptive software development' OR 'kanban') AND ('software development')	Emerald Journals (Emerald)
	Science Direct (Elsevier)
	ACM
	IEEE Xplore

A data extraction form is designed to collect individual information from studies. Ten criteria for quality selection and evaluation were also created to ensure the adequate quality of the studies that were finally included in the research material. Examples of inclusion criteria are: study focus, date of publication and clarity of results. The quality assessment generated a score based on the following items: description of the objective and context, research projects, data collection and analysis, justification of findings and conclusions, applicability of results, reduction of threats and use of references. The quality assessment forms were modified for different types of study included in the analysis: quantitative empirical studies, qualitative empirical studies, non-empirical studies and experience reports.

The steps applied to the literature review process are summarized in Fig. 2. A total of 79 studies were evaluated, of which 60 were accepted and included in the research material. The rest of the studies were excluded from the research material because they did not exceed the minimum quality threshold (at least half of the maximum score in the quality assessment). After applying all inclusion and exclusion criteria, 16 journal

articles and conference articles were considered relevant as they focused on strategies to increase customer value in the ASD. No experience reports were identified.

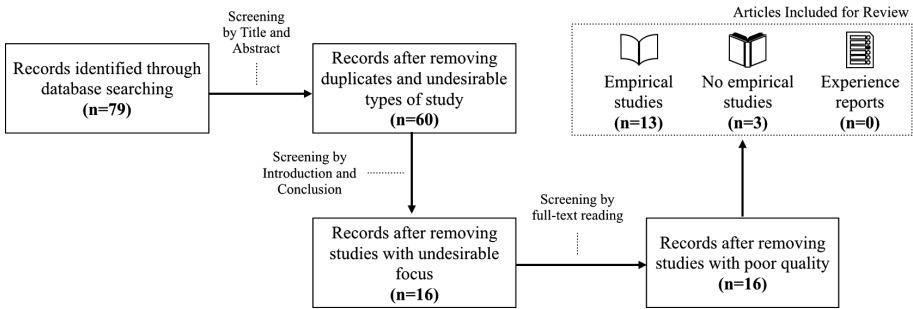


Fig. 2. Steps for literature review process.

3.2 Industrial Inventory

The industrial inventory focused on gaining a better understanding of the adoption of strategies to increase customer value in the ASD and to identify how these strategies are implemented in practice. To achieve these objectives, a secondary data analysis was performed on a set of experience reports in which the application of the strategies to increase customer value in the ASD is clearly evident.

To obtain the necessary secondary data, the related experience reports published at major agile conferences between 2012 and 2017 (including the XP Conference and Agile Conference series) that are publicly available online by the Agile Alliance were collected. The keyword “value” was used as the search term. This more generic form of the term was chosen because of the lack of a more robust search engine in the Agile Alliance’s work base, which allowed for the concatenation of terms and operators. This strategy resulted in a larger sum of identified work than would likely occur if the search engine allowed more specific filters. However, this did not affect the final result of this survey. It only increased the necessary work effort.

As in the literature analysis, a data extraction form is designed to collect information individually, from the reports. Selection and evaluation criteria were also created to ensure the appropriate quality of the experience reports that were finally included in the research material. Inclusion criteria were, for example, study focus, date of publication, and clarity of results. The quality assessment included the following items: description of the objective and context; set of observations; analysis of observations; justification of the findings and conclusions; applicability of results and use of references.

The steps for analyzing the secondary data based on experience reports are described in Fig. 3. In the search process, 78 experience reports were identified. After applying the inclusion and exclusion criteria, including quality assessment, 8 agile conference experience reports were found to be relevant because they focused on the proposed scope for this industrial inventory and were therefore included as secondary studies for analysis.

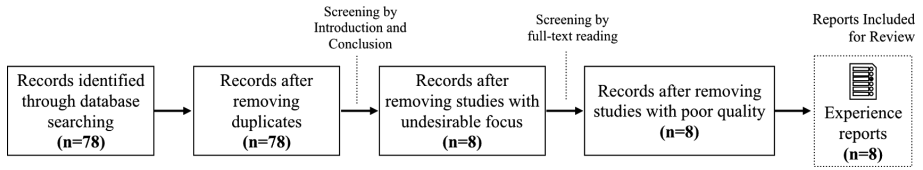


Fig. 3. Steps for literature review process in experience reports.

4 Results

In this section, we present the strategies to increase customer value in the ASD found in literature analysis and in the industrial inventory. The synthesis of the components of these strategies was organized in three subdivisions: characteristics of strategies; approaches, techniques and tools; and customer value metrics.

4.1 Characteristics of Strategies

The theoretical models of value definition contain a broad set of perspectives on this subject. The three fundamental groupings of these models, proposed by [9] and described in Sect. 2, are used to interpret the main characteristics of strategies to increase customer value. They are observed, directly or indirectly, in all articles selected for this study. The strategies identified, in some cases, may be associated with more than one theoretical model. The model to which it was more associated was chosen.

Table 2 summarizes a first set of papers identified in the literature analysis, which use the VCM perspective to justify and interpret customer value [41–46]. In this way, it is the functionalities of the software that have the customer value. They are the ones that will awaken in the customer the desire to have that product or service. It will be for them that the value of exchange and utility will be evaluated. Therefore, the prioritization of software requirements has to play a key role as a strategy to increase customer value. Only product features that have the highest customer value must be developed or at least should be built before the lower value functionalities. Consequently, the planning of releases for software versions should consider this order of priority. On the other hand, the challenges to achieve this goal are mainly in the interdependencies of the requirements and the teams involved in building the solution. In addition, the dissemination of project measurement information is described by [46] as fundamental to promote in the customers a greater awareness of the products and to empower the software development teams, through the increase of transparency, resulting in the increase of the customer value of the products created.

The interpretive basis of customer value in the BCMs considers in particular the relationship between the benefits perceived by customers and the costs (or sacrifices) needed to obtain them. They appear in a second group of literature analysis articles [14, 47–50], which are described in Table 3. The papers discuss strategies and approaches to planning and managing the benefits and costs of software products. They describe

Table 2. Literature analysis: strategies based on VCM.

Strategy	Implementation of the strategy	Article
Prioritize features to be developed	- Automate the prioritization of requirements to reduce conflicts between stakeholders	[41]
	- Recommend to the representative of the customer (product owner) a functional prioritization that reduces the interdependence between the requirements	[42]
	- Team should seek to understand the technical dependencies and risks associated with each functionality, relate the guidelines obtained by a previous business plan, consider the context of outsourcing, and then plan for development	[43]
Plan the roadmapping considering value	- Multifunctional team must prioritize the functionalities of software versions based on a deep understanding of customer needs, not strictly the product, and a long-term vision	[44]
Reduce dependencies between multiple teams	- Team must seek synchronization between teams and product optimizations that reduce cycle time for the customer	[45]
Increase the visibility of products and services	- By disseminating information on project measurements, promoting customer awareness and empowering development teams	[46]

ways of measuring the benefits, especially the natural difficulty of quantifying them, and discuss some cultural changes necessary to make concern about customer value relevant to organizations [47].

Table 3. Literature analysis: strategies based on BCM.

Strategy	Implementation of the strategy	Article
Seeking to maximize the result of the relation between benefit and cost	- Strictly quantify benefits, not just costs	[48, 49]
	- Improve efficiency in cost management	[14]
Consider in organizational performance assessments the value created for customers through the products	- Promote together with leadership a change in the organizational culture on the perception of how value is created	[47]
Seek increased client satisfaction	- Junction of the organizational culture of agility and maturity of processes	[50]

Finally, in the last grouping of the literature analysis are the works aligned with the MEM perspective [51–54]. MEMs are based on the assumption that customers purchase and use products or services to achieve favorable ends. Thus, a product or service represents a complex set of value satisfactions for buyers who attribute value to the

product or service according to the perceived ability to meet their needs in their context of use. In this group of literature analysis articles, continuous experimentation is present in all works as a strategy to increase customer value. Continuous experimentation refers to constant testing of the value of products as an integral part of the development process in order to produce more customer value. In this approach, product features are viewed as hypotheses to be tested by experimentation with customers.

The work of [16] uses the Software Value Map (SVM) developed by [55] to understand how agile teams and product owners interpret and prioritize value in development projects. In the SVM, the elements of the VCM are present, such as, to cite a similar case, the valorization of functionalities and non-functional requirements, as well as the elements of the BCM such as, in a similar way, the revenues and costs of the product, hedonic and competitiveness. [16] used sixteen aspects of value to represent four perspectives of value, not restricting the view of the client. The researchers concluded that “delivering the project on schedule” is the highest priority aspect in the ASD. However, depending on the market segment, the value order of priority may change. In this study, the users were not consulted, which could bring a greater understanding on this topic. Table 4 describes the characteristics of the strategies based on MEM and SVM identified in the papers selected for analysis of the literature.

Table 4. Literature analysis: strategies based on MEM and SVM.

Strategy	Implementation of the strategy	Article
Apply continuous cycles of experimentation and learning to find out what customers want. (MEM)	- Collect feedbacks directly from customers. Observe the application usage by customers	[52]
	- Flexible the productive process to accommodate changes resulting from the feedbacks of use of the applications. Monitor the technological and behavioral changes of the client	[51]
	- Seek to know deeply the customers and the domain of the application. Find suitable metrics for customer value	[54]
	- Make decision about product aimed at data and information	[53]
Focus on the most important aspects of value for the customer’s market segment. (SVM)	- Identify the most important value aspects and apply the most relevant agile practices to enable them. Be aware that the customer value of software can be interpreted by the team differently from the client	[16]

The selected experience reports present some characteristics and implementations on strategies to increase customer value in the ASD. The three theoretical models groups proposed by [9], VCM, BCM, and MEM, could be identified in the studies

[56–59] as was also found in the literature review. Table 5 describes the strategies identified. In some reports, highlighted in Table 6, however, the strategies relate the implementation of the people management [60], project management [61, 62] and strategic management [63] with the increase in customer value.

Table 5. Experience reports: approaches to increase customer value.

Theory	Strategy	Implementation of the strategy	Article
VCM	Prioritize the most useful features to be developed and validated frequently by the client	- The team should apply the Lean Thinking principles associated with some agile techniques to assist in the prioritization of the functionalities	[56]
BCM	Seek the maximum functional and non-functional quality of the product, without leaving aside, the management of the invested resources	- Project leaders must consistently perform product requirement management	[57]
MEM	Apply continuous cycles of experimentation and learning to find out what customers want	- Collecting of feedbacks directly from customers. Observe the application usage by customers	[58]
		- Conduct continuous product experimentations guided by single value propositions	[59]

A new grouping was suggested to classify and analyze some experience reports: managerial emphasis. All of them share the idea of applying management as a means of increasing customer value. In Table 6 are grouped the experience reports that evidenced the managerial emphasis to increase the customer value. The report [61] comments on the lessons learned from the introduction of a pre-project phase, applied during the sales process that resulted in greater project management effectiveness and, consequently, increased customer value. Improvement in project management, as a means to maximize customer value, is also cited by [62], which describes the effects of Kanban technique application and related metrics. [60] reports on some experiments conducted to study the consequences of frequent and planned changes to the members of agile teams, named by the author as dynamic reteam. According to the report, there was a positive effect on the increase of the motivation of the people and in the organizational learning and, consequently, they were able to increase the customer value of the products. In the experience report of [63], the creation of a visibility room and a structured project monitoring and review process resulted in a better strategic alignment of demands and an increase in product customer value.

Table 6. Experience reports: managerial emphasis as strategy to increase customer value.

Theory	Strategy	Implementation of the strategy	Article
Project management	Improve the efficiency of project management (time, cost and scope)	- Introduce a pre-project phase, involving the potential customer and the development team to improve the efficiency of project management. The new phase seeks to explain ASD to the potential customer, “discover the product” and understand the “psychology” of the customer. Improved project management results in increased customer satisfaction and, consequently, increases the customer value	[61]
	Improve predictability and productivity	- Cycle time management and reduction of work in progress increases the delivered customer value and speed of delivery	[62]
People management	Increase the motivation of development team members and organizational learning	- The customer value of software products is made feasible and improved through motivated and constantly learning people	[60]
Strategic management	Increase the strategic alignment of software development projects	- The strategic alignment of all the company’s projects maximizes the customer value	[63]

4.2 Approaches, Techniques and Tools

From the literature analysis and from the industrial inventory, the results could be summarized using a high-level perspective in relation to the approaches, techniques, and tools used by the strategies to increase customer value in the context of the ASD. Figure 4 shows a mental map with the organization of articles and experience reports by the value definition models proposed by [9] and by the conceptual emphases of the approaches, techniques and tools identified.

Figure 4 shows that agile techniques, ceremonies, or artifacts, in their classic forms or adaptations, are recommended in all value definition models. Depending on the objective pursued by the strategy, specific agile techniques or rituals are used as a priority, for example in MEM strategies, the importance of short development cycles (sprints) to obtain user feedback is reinforced [51, 54]. Among the strategies associated with BCM, the agile splitting user stories technique was used to factorize the requirements in order to facilitate the prioritization of the higher customer value functionalities [42]. This finding, on one hand, corroborates with the results of the study [16] that found out that there is a variable influence of each agile practice in relation to the increase in customer value. On the other hand, they are always associated with other techniques and tools that are not classified as agile or, in some cases,

adaptations of classical agile practices [45]. Some techniques of Lean Thinking were found among the works, among them, for example, Kanban [62], map value flow [56] and minimum feasible product [52, 59].

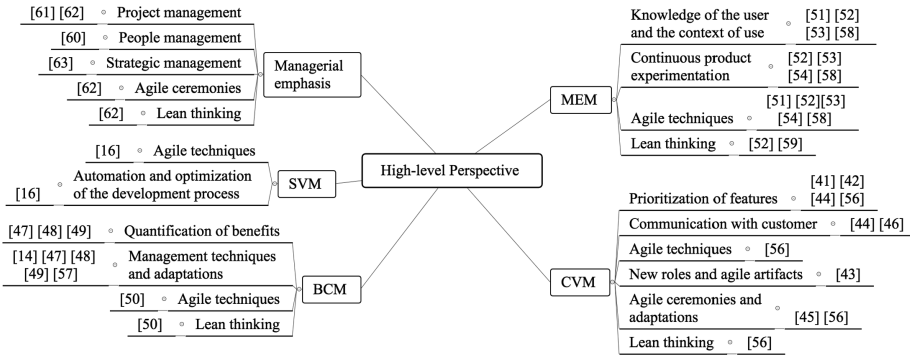


Fig. 4. Map of approaches, techniques and tools identified

4.3 Customer Value Metrics

Some metrics to quantify the customer value were found in literature analysis and industrial inventory concentrated on few publications. A total of 20 metrics were summarized and detailed in relation to their objectives in Table 7. The metrics found are derived from the strategies proposed in these publications. Therefore, in some cases, they may be associated with more than one theoretical model. The model more strongly associated with each strategy was chosen. The articles related to the MEM emphasized the importance of the metrics, mainly, to help in the interpretation of the experiments in their use of the products by the consumers, that is, the value recognized by them. However, the work was not explicit in indicating which metrics were employed. In Table 7 we used the metric identification structure of the Goal-Question-Metric approach [64] to give greater clarity of the objectives of each metric proposed by the respective authors.

In most of the selected experience reports, as was found in the literature analysis, no customer value metrics were found. Only two reports [61, 62], which emphasized the improvement of project management as a strategy to increase customer value, report metrics inherent to the managerial approach given by the authors. [61] indirectly describe time and cost control without citing specific metrics. The author indicates the volume of functionality delivered to the client as a project management efficiency metric. The experience report of [62] points to metrics related to Lean Thinking and Kanban such as cycle time, number of functionalities in development (working in progress), and system throughput rate, however, both reports do not detail the measurement process, nor how the measurements on the value delivered to customers are applied. Therefore, it is difficult to confirm the effectiveness of the results of the strategies applied to increase customer value, whether positive or negative.

Table 7. Customer value metrics in the context of the ASD.

Theory	Purpose of the measurement	Question to be answered	Metric	Article
VCM	Give flexibility to prioritize the features with higher customer value	What is the level of interdependence of the product features?	- Total dependence for functionality	[42]
	Reduce delivery time for features with higher customer value	How long does it take, on average, to deliver a feature requested by the user until it's available for use?	- Cycle time	[45]
BCM	Manage the customer value of the product under development	How are we delivering customer value?	- Total benefit and cost points, benefit and cost performance index, benefit x cost index, return on investment and productivity of benefit points	[48, 49]
	Increase the performance of delivery of customer value	How effective are we at increasing customer value?	- Productivity of value points, operating expenses by period, amount of work in progress, cycle time, number of critical defects per period, average time to stabilize a release and % of the estimated scope delivered	[14]
MEM	Enhance product customer value	Does the user recognize the value delivered?	- Metrics based on consumer feedback, collected during trials and established by teams according to context. They should describe the behavior of the consumer during the use of the product	[51, 53, 54]

5 Conclusions and Limitations of the Study

As a general answer to the research question that addresses this study: “*How are the strategies currently practiced in the software market to increase CV in the ASD?*”, it was concluded that no study could be found that indicated clearly and deeply what are the strategies to increase customer value in the ASD. Although some studies provide

initial contributions as recommendations and results of some strategies, a key implication for research is that further research is still needed, especially through empirical studies. It was found that, with very few exceptions, most of the studies analyzed consider the increase of customer value a high-level perspective. The limitations of the studies analyzed in relation to these strategies implied little or no knowledge about the effective results of their adoptions by the agile teams. Added to this, the lack of customer value measurement methods and metrics prevented any evidence of resulting gains.

It was possible to identify some elements and characteristics that describe the main strategies to maximize customer value in use by the software industry today. The main points identified during this study were organized into three categories: (1) characteristics and strategies of the strategies; (2) approaches, techniques and tools; (3) customer value metrics. However, when compared to the possibilities indicated by the customer value theories in literature, the initiatives are limited and little explored, possibly due to the lack of more empirical knowledge of the key factors for successful deployments and the real impacts they can provide. These issues present themselves as opportunities for future research.

Although the industrial inventory has been conducted from a diverse set of companies, their external validity should be discussed in the interpretation of the study results. Some companies were actively reporting their experiences, while many companies associated with the Agile Alliance did not contribute any reports. The companies that provided the material of the reports of experiences are large companies and represent a specialized knowledge in their sectors. However, the results can still be validated and specified using a larger sample of companies. Despite the above, we were able to discover elements and characteristics of the strategies to increase customer value and to find some evidence of its applications in agile teams.

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