

FINANCIAL ADVANTAGES OF SOFTWARE PERSONALIZATION

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ABSTRACT

Software personalization is considered to be a must have for B2B (Business to business) clients and suppliers. Clients need personalized applications in order to gain competitive advantage on the market but also this is needed due to existent complex IT infrastructure where the applications need to be integrated and implemented. Suppliers on the other hand in order to keep their market share they need to offer software personalization solutions. In order to determine the advantages of software personalization a framework is proposed in this article then the article looks into analysing three software companies listed on NASDAQ stock exchange. The analysis is focused on identifying the financial advantages a software company has by being involved in software personalization activities.

KEYWORDS: *Software Personalization, Customization, Monetary Value of Customization, Software Customization Importance, Software Personalization Advantages.*

1. INTRODUCTION

Personalizing software applications has become a necessity, especially for the business to business (B2B) segment. Unlike a domestic user, business clients are facing an increased complexity of the IT infrastructure in which new applications must be implemented and integrated, so that software customization under the most simplistic form could be translated into its adaption in the existent IT infrastructure.

Providers in order to maintain their market share must be aligned to the new requirements and provide customization services for software applications. As accounting standards do not include specific accounts for software personalization activities, these activities are incorporated in different segments.

The article proposes a framework model describing the relationship between suppliers and clients and their connections within the software personalization context. The model is built to determine the advantages of software personalization.

In the following, it will analyze three companies active in the segment of "Computer software", precisely in order to emphasize the forms under which software application is

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customization. Going forth the authors will analyze the amount of revenue from customization of software applications, their evolution over time and their share in total revenue achieved in 2015.

Moving forward three companies active in the segment of "Computer software" will be analyzed, precisely in order to emphasize the forms under which software customization can be identified. Going forth the authors will analyze the amount of revenue generated by software customization activities, their evolution over time and their share in the total revenue achieved in 2015.

2. THE CLIENT - SUPPLIER RELATIONSHIP WITHIN SOFTWARE PERSONALIZATION SEGMENT

The Customer-Supplier relationship in the context of software personalization is transposed in Figure 1- Customer-Supplier relationship in the context of software personalization, the figure is represented below and it is a proposal for a framework that describes the connections between customers and suppliers.

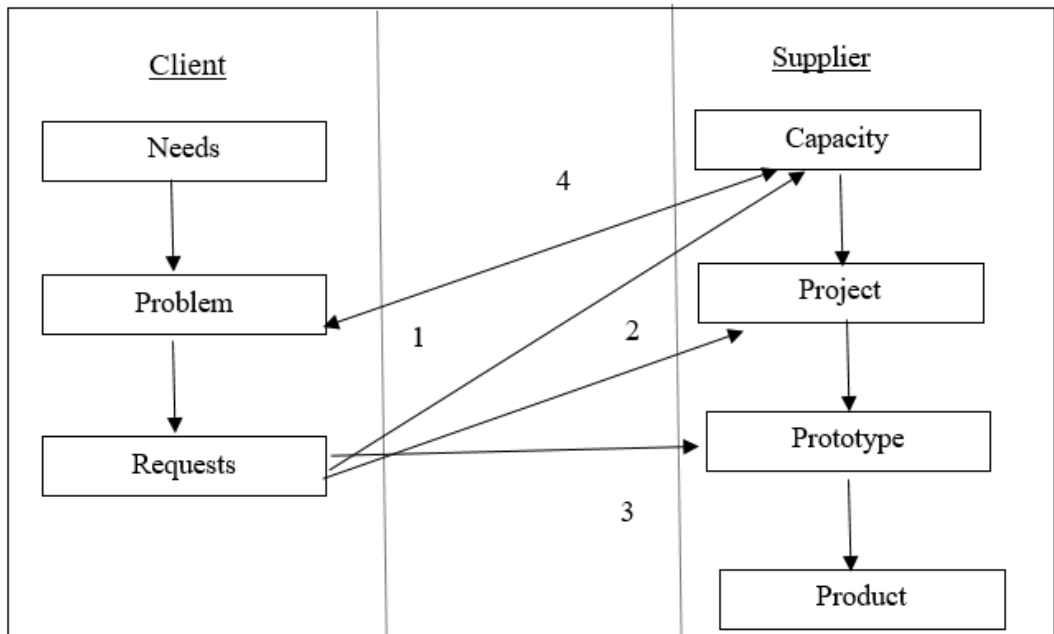


Figure 1: Customer-Supplier relationship in the context of software personalization

Customer needs are transposed into problems that require one or multiple solutions (4), these solutions can be identified via a provider’s capacity (through skills and capabilities).

After defining the problem and identifying solution, we can go further in defining the requirements themselves. These requirements can be transposed into a new product (1), in a co-design initiative (2) or into the adaptation of an existing product or prototype (3).

The nature of the connections is given by the value added resulted from software personalization activities and the timeframes and costs associated with these types of activities. The success of cohesion denotes positive customer experience in relation to the contracted supplier.

3. SOFTWARE CONFIGURATION VERSUS SOFTWARE CUSTOMIZATION

Most of the times no difference is made between configuration and customization, but the impact of software configuration or customization is high, among impacted areas it can be mentioned:

- How fast can users work with the new system?
- How much will they depend on IT teams in order to carry on their daily activities?
- How easy will it be for future users to keep up with system upgraded?

When it comes to a configurable system, most often it refers to a system that can be easily adapted to a company's operations [1]. Usually one of the expert users, without having necessarily advanced knowledge of IT, but with a preliminary training could set up such a system. A system configuration can take from several minutes to several hours. Such a system comes with the so-called GUI (graphic user interface) which is a friendly interface that users can use for system configuration [1]. Also, configuration means changing parameters so that through GUI interface and with buttons or drop-down lists, an expert user can make changes at the configuration level without having an impact on the source code.

In terms of customizing applications, this involves using the customer's servers, IT professionals with programming skills [1]. Unlike configuration, where a GUI interface is required to complete the configuration activities, in order to personalise the software, specific tools are needed in the design and development stage and specialized personnel to bring changes to the source code. Also unlike configuration where an internal expert user can complete software configuration activities, when it comes to customization, new requirements should be sent to the IT team that will analyse the requirements based on their priorities and will provide an estimate of the time and will issue a request for financial resources [1].

Below, we will be able to observe some of the characteristics of configurable systems [1] (Fig.1)

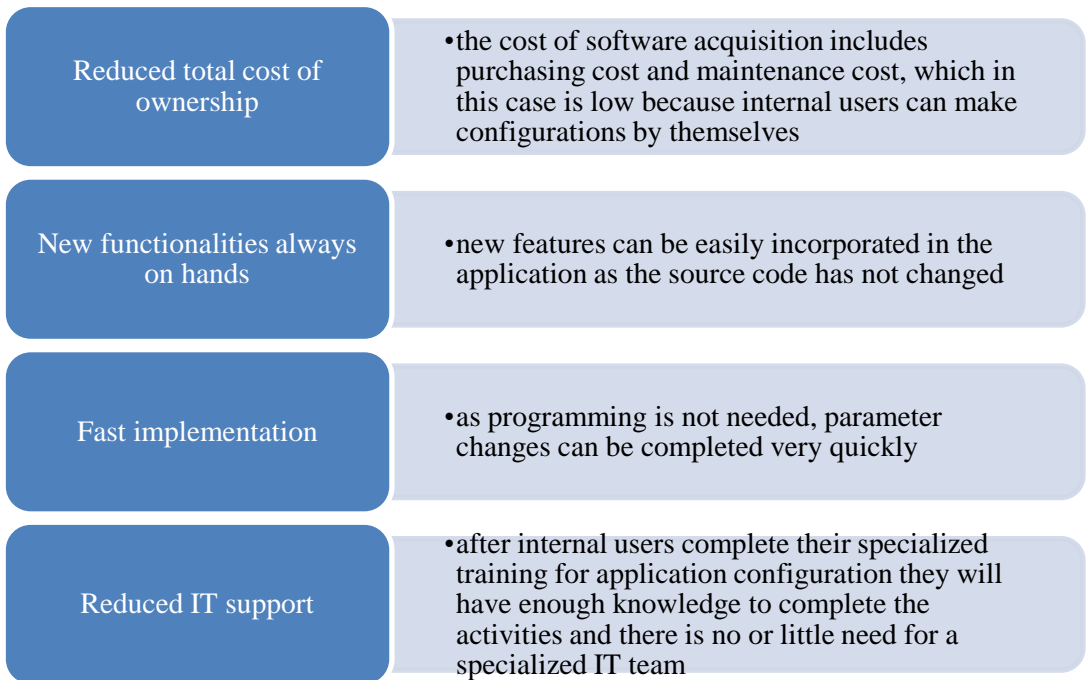


Figure 1. Characteristics of a configurable system

Among the characteristics of customizable systems it can be mentioned the following: [1] (Fig.2):

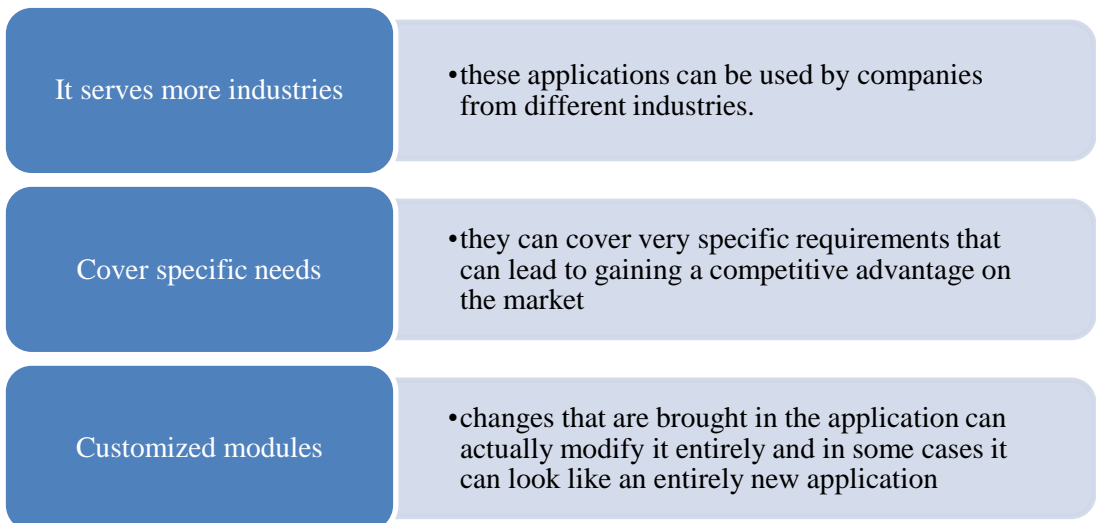


Figure 2. Characteristics of a customizable system

If the configuration of a system is not sufficient, next step can be meaning customization as observe in Figure 3- Configuration and customization [2].

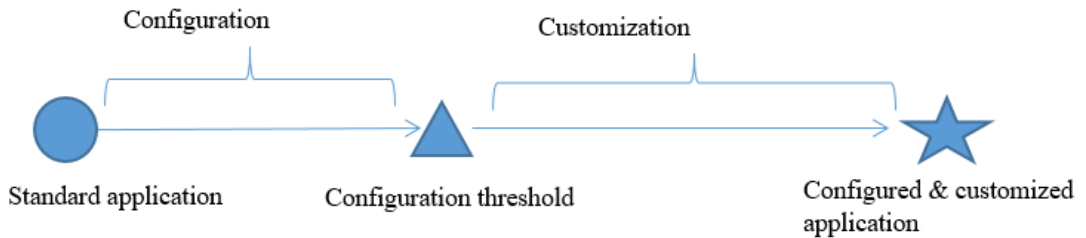


Figure 3. Configuration and customization

Source: Wei Sun; Xin Zhang; Chang Jie Guo; Pei Sun; Hui Su, “*Software as a Service: Configuration and Customization Perspectives*”, Congress on Services Part II, 2008.

Moving forward the term software personalization will include both software configuration and customization.

If the software personalization is required for internal purposes, then the main questions that the company should respond to would be:

- In which department will the application be used? (finance, procurement, logistics)
- Are the business processes clear and well defined with the department?
- Are the existing business processes stiff?
- Can the business processes be subject to change?
- Does the company's competitive advantage consist in the process that is about to be incorporated or change in the application?

If the application is being customized for external customers, main questions to clarify would be:

- Does the company provide a wide range of packages and services?
- Do the company's clients come from different geographical and cultural environments?
- Are there more than one or two reasons why customers buy the company's applications?
- Are the applications being used in other purposes than the initial designed ones?

4. SOFTWARE PERSONALIZATION FORMS AND SHAPES

The Ultimate Software Group Inc – is a cloud solutions provider in the human capital (HR) segment. In the annual report of 2015 the company The Ultimate Software Group Inc. describes their software personalization capabilities as it follows [3]:

- **Rich and Highly Configurable Functionality.** UltiPro has rich functionality built into the solution and provides extensive capabilities for configurability. As a result, the customers can avoid extensive customizations and yet are able to achieve a highly tailored solution to meet their specific business needs. Since UltiPro's feature-sets are unified, their customers are able to streamline their management of the total employment cycle and can generate strategic HR and

talent management reports from UltiPro as their primary, central system of record for their employee data.

- Flexible, Rapid System Setup and Configuration. UltiPro has been designed to minimize the time and effort required to set up and configure the system to address individual company needs. Largely because the UltiPro solutions deliver extensive functionality that can be configured to align with the customers' various business models with few customizations, the setup of new customers is faster and simpler than implementations typical of legacy, on-premise software.
- Rich End-User Experience, Ease of Use and Navigation. The products are designed to be user-friendly and to simplify the complexities of managing employees and complying with government regulations in the HR, payroll, and talent management areas.

All software personalization related activities (customization, configuration, implementation and integration) are mentioned under the umbrella of professional services:

Ultimate's professional services include system setup and activation (i.e., implementation), executive relationship management (“ERM”), and knowledge management (or training) services; the setup and activation consulting services are differentiated from those of other vendors by speed, predictability and completeness. [3]

Within the profit and loss account the software personalization costs and revenues are reflected in the services account.

MicroStrategy Inc- the leader in the segment of enterprise software platforms, this company stands as having the capability to produce applications that can be customized and integrated into existing business intelligence structure:

- Customizable applications and integrated into business intelligence systems: the company offers software applications that a client can customize to a large scale; this allows organizations to incorporate their own brand in the mobile and web applications, as well as to integrate these applications into other corporate systems [4].

The fact that this company offers its clients the possibility to incorporate their own brand, the option of integration with other systems and single sign-on has led to an increase in deployment options and enables IT groups to implement the programs throughout the companies in a customized manner while the clients can continue to leverage their investments in other technologies [4].

When it comes to accounting reporting, the revenues and costs generated by software personalization activities are included in “other services” account.

Tyler Technologies Inc- is a solutions and services leading provided for information management systems in the public sector. Within the annual report the company Tyler Technologies concentrates its software customization activities in software services category:

- Software services – the company provides a variety of professional IT services to clients who utilize their software products; all of their client’s contracts include installation, training and data conversion services in connection with their purchase of Tyler’s software solutions [5]. The complete implementation process for a typical system includes planning, design, data conversion, set-up and testing; at the culmination of the implementation process, an installation team travels to the client’s facility to ensure the smooth transfer of data to the new system; installation fees are charged separately to clients on either a fixed-fee or hourly charge basis, depending on the contract [5].

The company reports the revenues that are being generated by software personalization activities in the category entitled software services.

Going through this analysis of the tree company, we could notice that within software personalization activities are mentioned the types of activities described in Figure number 4- Software personalization activities:

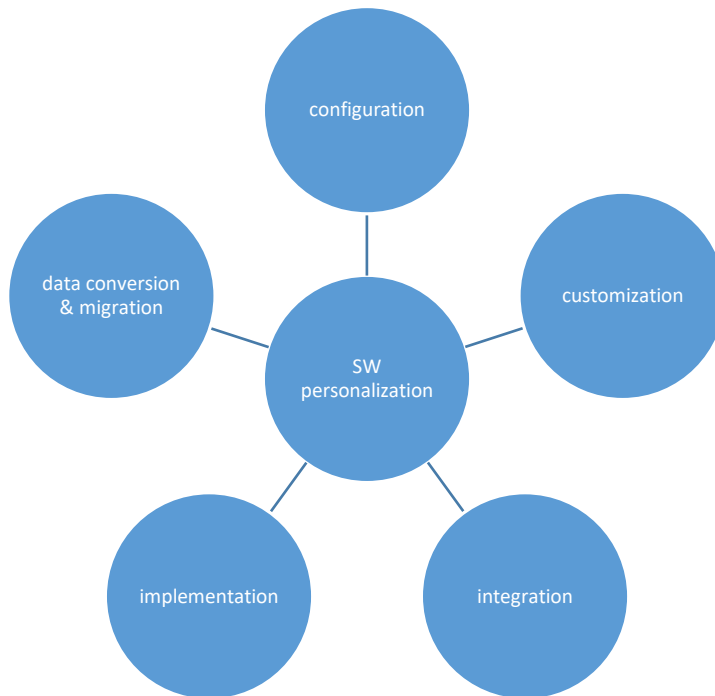


Figure 4. Software personalization activities

5. SOFTWARE PERSONALIZATION REVENUES' EVOLUTION AND THEIR SHARE WITHIN THE TOTAL REVENUES

To determine the income evolution from software personalization activities, it has been taken into account the revenues declared in the annual reports.

Ultimate software and MicroStrategy have mentioned their income from the period 2015-2013. Tyler Technologies company mentioned only revenues from the years 2014-2015. MicroStrategy company revenues were adjusted with losses from Exchange rate differences as it follows: for the year 2015 it has been added to the sum of \$ 7 357, for 2014 it has been added the sum of \$ 1 078 and for 2013 it has been added to the amount of \$ 859.

All amounts are expressed in the same currency (US dollars) and in thousands of dollars. All types of income reported as revenue from software customization activities contain income from training activities in order to use custom applications.

The total revenues and the revenues generated by software personalization activities from the three companies fall under the same value range which allows us to compare the three companies, this value range can be noticed in figure number 5 – Graphic representation of revenue segmentation.

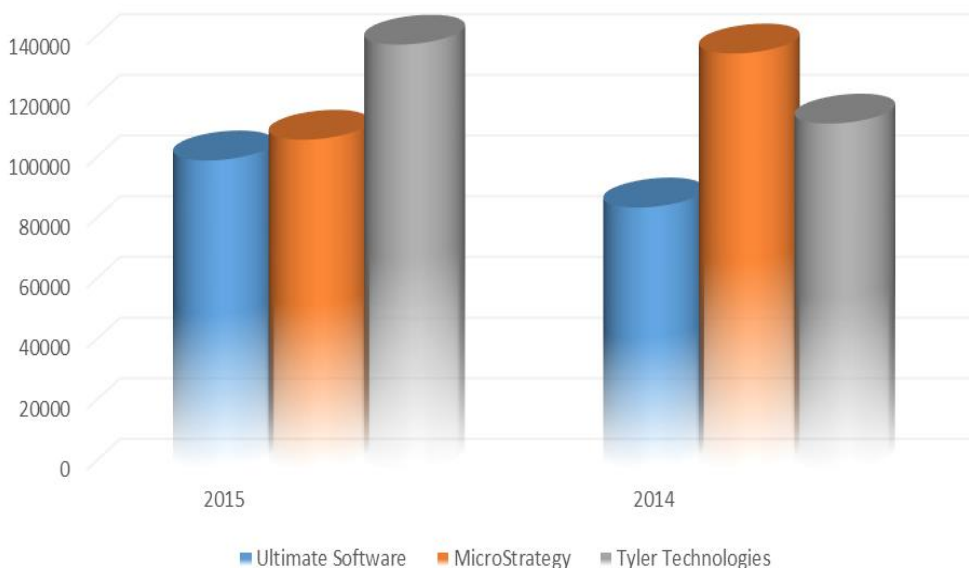


Figure 5. Graphic representation of revenue segmentation

From the analysis of the evolution of income in accordance with Figure No. 6-The evolution of income generated by software personalization activities – it can be noticed that 2 out of the 3 companies have achieved further growth in this area:

- Ultimate Software Inc. has seen a 15% increase
- MicroStrategy Inc. recorded a decrease of 26%
- Tyler Technologies Inc. recorded an increase of 19%

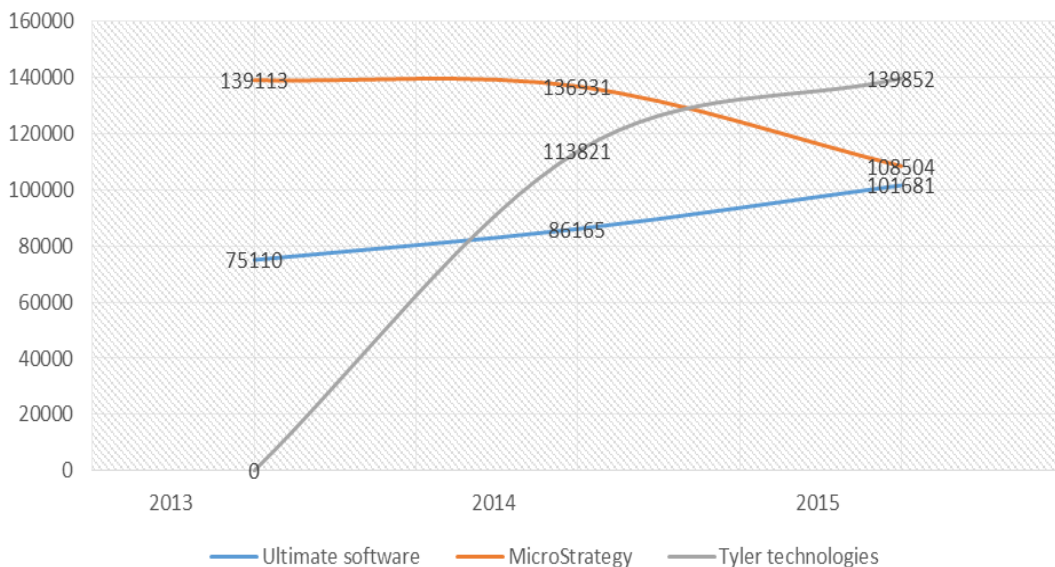


Figure 6. The evolution of income generated by software personalization activities

We could draw a first conclusion that software personalization constitutes a growing segment. To study the importance of this kind of income we need to turn our attention towards the shares taken up by these kind of revenues in the total income. A consolidated view is offered by table number – The shares of software personalization revenues in total income.

Table 1. The shares of software personalization revenues in total income

Company	2015 (% total income)	2014 (% total income)	2013 (% total income)
Ultimate software	16.5%	17.0%	18.3%
MicroStrategy	19.1%	23.4%	24.0%
Tyler Technologies	23.7%	23.1%	/

We can see a decline in software personalization revenue shares over the years as follows:

- Ultimate Sofwatre Inc. recorded a share of 18.3% in 2013 dropping towards 17% in 2014 and 16.5% in 2015 but we can notice a 15% increase of the nominal value between 2014-2015.
- MicroStrategy Inc. recorded a share of 24% in 2013 going down in 2014 to 23.4% and in 2015 to 19.1% , the massive loss of recorded in the period 2014-2015 can be put and on account of the decrease in income’s nominal value with a considerable percentage (26%)
- Tyler Technologies recorded a share of 23.1% in 2014 and then this grew up to 23.7% in 2015, in conjunction with an increase in the nominal value of 19%.

In accordance with Figure 7- Maximum and minimum values of software personalization revenue shares in total income - we can notice that the share of such income in total

income belongs to the range 16% to 24%, which foresees increased attention and maximizing revenues from this area in the future.

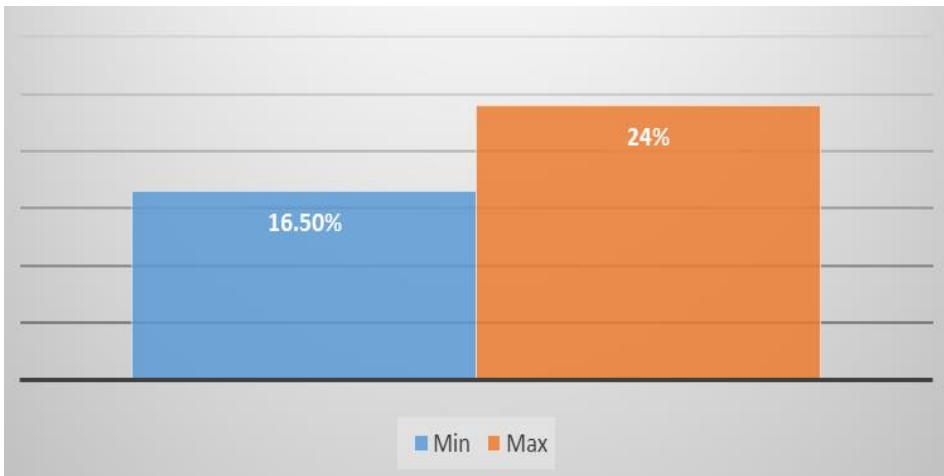


Figure 7. Maximum and minimum values of software personalization revenue shares in total income

6. CONCLUSIONS AND FUTURE DIRECTIONS

The article proposes a model that describes the client-vendor relationship put in the context of software personalization. From the analysis of three IT companies that were listed on NASDAQ stock exchange, a series of ideas about the importance and benefits of software personalization activities were sketched.

Even though the initial definition of software personalization included only configuration and customization, after the analysis of the annual reports, the definition can be extended to other activities that involve personalization like integration, implementation, data conversion and migration.

It was also observed that revenues generated by personalization software activities registered an increasing trend and their values in the total revenues vary between 16.5% and 24% which underline their significance.

With regards to future directions of study, the analyzed database should be more broadly extended in order to obtain a significant statistic sample and to build and test a range of hypothesis driven from the ideas expressed above. A parallel analysis focused on costs is another future direction as this would underline how much it costs to run software personalization activities and the significance of cost savings

When it comes to the proposed framework, the connections between suppliers and clients will need be heavily analyzed as they have a major impact over the customer experience with a vendor and its products and solutions.

7. REFERENCES

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