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A Survey Using Kano Model and Road map to issues Standard Model of e-commerce Using SPLE technique

Abstract: Software Product Line Engineering (SPLE) have been widely studied by many researchers and they have been used to solve different real-world applications that have more than design. However, most (SPLEs) work well only when using standard model depends on strategic of (SPLE).Theses strategies implemented through three stages Domaine engineering, design portfolio with a road map and application engineering. Domaine engineering considered the first stage of any design depends on (SPLE) contents on some of the methods such as Feature Model Diagram (FMD), Orthogonal Variability Model (OVM) and Domain Requirements (DR).They implement by using use case diagram and find link with all of them via (OVM).Next stage for any design depends on (SPLE) developing features that used in previously designed depending on the design new portfolio and roadmap using methods called Questionnaires and statics. In this paper, we modify and produced hybrid design model through developed all features in previous design model to producing the new portfolio and roadmap for E-commerce model depending on making a survey. The proposed new hybrid design depends on using new methods to find which one is best from features, we were used Kano model to design the questionnaire to get true evaluation results of the survey, which was conducted by 83 from academic and researcher and 129 university students of whom 45 graduate students and 84 students and about 53 interested practitioners in design and others interesting buying from the internet and e-commerce.

Keywords: Software Engineering; SPLE; E-commerce; Kano model; Roadmap; Portfolio; Product family, Application design.

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1.Introduction

Specialists in software engineering are striving to find ways and techniques to facilitate their work and to achieve the highest levels of production. Needing to use software product line engineering (SPLE) techniques in mass products has emerged to be able to meet the needs of market for those products. [1 ,2]

There are three basic stages of going through the development process to any product among those stages are the second stage that researcher's effort to develop and find the best methods and techniques to determine the best features. The first stage is very important for any design depends on (SPLE) this stage called domain engineering, contents on feature model diagram, orthogonality variability and requirements it using use case diagram to describe the system and it using feature model diagram to find relation between all of them features and find how to

link it between all of them via orthogonal variability diagram to give viewpoint for any designer how the system become in future [3].

There are lots of mathematical and statistical models that have to do this job and each of them has its own work. To determine the best results, we were used Kano model and employed it as an effective tool in evaluation, analysis and scanning operations. [4,5]

In this study, it was designed a new model using the Kano model to three standard models for e-commerce site to be ultimately a unique model in the development and that lead to making this study is gaining strength from how to employ Kano model of analytical methods for the production of tables showing the actual assessment to the needing to add a new features or delete, update any existing features. This strength proved by produce three different models each model has different developmental features and put a roadmap to all

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products according to Portfolio to produce a unique model for e-commerce site.[6,7]

In this study we modify on some of features of model E-commerce and find hybrid model depends on questionnaires and statics through make a survey to determine best features to developing it in future to produced real questionnaires for which one feature is best and which one we should replace it in the next stage, this method give the practitioners and designers real viewpoint to help them to take decision to design next version. The rest of this paper is organized as follow. section 2 will review the domain engineering represent first stage for any design depends on SPLE.

2. Domain Engineering

When the practitioners of SPLE to develop any a model, they need to pass several phases, including the preliminary analysis in the domain engineering (DE), then the second phase, which focuses on the use of advanced technologies to give an actual questionnaire diagram about the market needs. we proposed new hybrid methods have been adopted using the Kano Model and establishing basic Road Map for producing the Standard Model to be the nucleus which the phase of Application Engineering in the SPLE will be built on as next step in future. after finding describe for all features and completely viewpoint via [2]. we make developing to this model and enhanced features by using, hybrid technologies have been used by the Kano Model and establishing Roadmap as well as a real field questionnaire represents (83) academics and researchers and (129) university students contains 84 students from undergraduates, (45) MA students and (53) citizens interested in online shopping. [8]

1. Product Management

Product Management using the SPLE technology needs a fixed methodology based on Roadmap. As to understand Standard Model Product, there should be the management of the first and second analysis phases and to make a real questionnaire, then to evaluate the results according to a hybrid model based on Kano Model. The questionnaire has been designed in a special way including a group of functional and dysfunctional questions and to give the users the freedom of choice, then making an analysis according to the Kano Model and to give real fixed results which enables the developers of the software engineering to rely on it to create fixed development models for any similar product. [9,10]

II. Kano Model

The Kano model is a theory of product development and customer satisfaction, which classifies customer preferences into five categories (Basic requirements, Satisfiers, Delighters, Indifferent requirements, Questionable)[5]. The Kano model gives a good view of the product features that are important to stockholders. The goal to use thus tools to help product features and gives better enhancement to team understanding. [4,5]. The Kano model cares about to the characteristics, instead of focusing on the needs of customers. The Kano is drawing method and course of action to find the best questionnaires customer needs. Table (1) represents the questionnaire that we make it and contain 10 questions related with our proposed system e-commerce and then we used the result as inputs to Kano Model. Table (2) represents the evaluation of the results that collected from questionnaire and Table (3) represents the final results. The Kano Model contains three phases as the following: [7,11]

1. The proposed hybrid model

In this paper, we proposed a new method to be able to classify the best features for first version design model e-commerce, The First Phase; Real world Questionnaire: The Questionnaire Phase is considered to be a basic phase while using the Kano Model, that contains several axes, how to make-up the questionnaire questions is the most important axis, in addition to find new and hybrid

After that, a special table has been designed to contain two types of the making-up of the questionnaire questions; the first type is to ask about the feature that meets the need of the beneficiary, titled by (Function), the other type which is the opposite type of the first one that concerns with whether the feature doesn't meet the need of the beneficiary, titled by (Dysfunction). The beneficiaries' answers are being intersected with selectors have been put in the questionnaire model such as; (*Like, Expected, Don't care, can live with it & Dislike*) with a group of customized fields for the answer. The questionnaire has been held by two ways, the first one was electronic through constructing a temporary website on the internet to get the questionnaires from the interested people with the e-commerce. The second way was by using a special designed paper-based model, the table (1) below shows the results of the questionnaires ways in the intersection of the information with those questions that's designed to give a high accuracy that reached up to 92%, which is a very

high percentage in expecting the market's need. The questions of the questionnaire have been made-up in a scientific way divided into 4 classifications according to the targeted society segments for this questionnaires.

These classifications include the segment of the professors and the researches in a group of the

Turkish universities, the segment of the students which divided into undergraduates and MA students in the Turkish universities and the last segment that's of the interested in the e-commerce from the consumers and traders.

Table (1): Real Questionnaires table

Question #1	Answer									
Function Suppose that your E-commerce system could use Net-Banking as a payment method, Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Dysfunction Suppose that your E-commerce system couldn't use Net-Banking as a payment method, , Can you give your opinion?	Like									
	Expected									
	Don't attention									
	May subsist with it									
	Aversion									
Question #2	Answer									
Function Suppose that your E-commerce system could use direct shipping as one of the delivery methods, Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Dysfunction Suppose that your E-commerce system couldn't use direct shipping as one of the delivery methods, Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Question #3	Answer									
Function Suppose that your E-commerce system could use Price in item search service, , Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Dysfunction Suppose that your E-commerce system couldn't use Price in item search service, , Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Question #4	Answer									
Function Suppose that your E-commerce system could keep Billing address as service, , Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Dysfunction Suppose that your E-commerce system couldn't keep Billing address as service, , Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Question #5	Answer									

<p>Function Suppose that your E-commerce system could create Debit Card as a new payment method, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
<p>Dysfunction Suppose that your E-commerce system couldn't create Debit Card as a new payment method, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
Question #6		Answer									
<p>Function Suppose that your E-commerce system could make your personal information available for all, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
<p>Dysfunction Suppose that your E-commerce system couldn't make your personal information available for all, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
Question #7		Answer									
<p>Function Suppose that your E-commerce system could use Drop Shipping in your delivery system, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
<p>Dysfunction Suppose that your E-commerce system couldn't use Drop Shipping in your delivery system, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
Question #8		Answer									
<p>Function Suppose that your E-commerce system could add Call center service in Notification methods, Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
<p>Dysfunction Suppose that your E-commerce system couldn't add Call center service in Notification methods, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
Question #9		Answer									
<p>Function Suppose that your E-commerce system could allocate the Personal rewards just for members, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
<p>Dysfunction Suppose that your E-commerce system couldn't allocate the Personal rewards just for members, , Can you give your opinion?</p>	Such as										
	Predictable										
	Don't attention										
	May subsist with it										
	Aversion										
Question #10		Answer									

Function Suppose that your E-commerce system could use Multiple languages as a service, , Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									
Dysfunction Suppose that your E-commerce system couldn't use Multiple languages as a service, Can you give your opinion?	Such as									
	Predictable									
	Don't attention									
	May subsist with it									
	Aversion									

2. Combining the new model; Evaluation of the Questionnaire:

In order to efficiently enhanced all features, we make the questions have been made-up as well as the answers have been taken from the beneficiaries who have been divided into four classes. Now, we need to start with the actual evaluation phase and the basic analysis based on the Kano Model that provides workspace, tools and evaluation. The second phase has been designed in a new way through finding the

requirements that would be developed according to its importance and to give it a sequence from 1 to 5, each number has a certain significance, as the following; (Basic requirements, Satisfiers, Delighters, Indifferent requirements, Questionable). According to the beneficiaries answers and after doing the determined intersection which it; (Like, Expected, Don't care, can live with it and Dislike).

1. Basic requirements
2. Satisfiers
3. Delighters
4. Indifferent requirements
5. Questionable

Table (2) represents the Evaluation table

		Dysfunction Qu.				
		Such as	Predictable	Don't attention	May subsist with it	Aversion
Function Questions	Such as	?	3	3	3	2
	Predictable	5	4	4	4	1
	Don't attention	5	4	4	4	1
	May subsist with it	5	4	4	4	1
	Aversion	5	5	5	5	?

3. Experiments and Discussions

Third Phase; Features Distribution rating, in this section considered important phase for extracting features that we will enhanced according survey and statistics this phase called features distribution rating by using the Kano Model, the market requirements of the e-commerce product have been distributed based on the SPLE technology. Ten important properties have been chosen and knowing the results over each property from the questionnaire to reach a general perception of any property excluding from the previous product, or any property will be added or

updated based on the shown percentages of the questionnaire. Table (3) shows these final results. The results showed that some features took evaluation of No. (1) Which is the highest evaluation is "Basic requirements", features that took evaluation of No. (2) Is "Satisfiers", features that took evaluation of No. (3) is "Delighters", features that took evaluation of No. (4) is "Indifferent requirements". Finally, those which take evaluation of No. (5) is "Questionable". The features that took category no. (1), its addition to the new product will be mandatory, thus, the product must be developed

based on the SPLE technology according to above results

Table (3) The performance Kano Model (real results)

Distribution of customer rating	Frequency of Occurrence of the Individual Requirement Classes						Total %	Category	
	1	2	3	4	5	?			
Requirements	Net-Banging	0	10	0	40	50	0	100	5
	Shipping Delivery	10	0	20	70	0	0	100	4
	Search by Price	20	0	10	70	0	0	100	4
	Billing Address	0	10	0	30	60	0	100	5
	Debit Card System	0	10	50	40	0	0	100	3
	Personal Information	10	10	10	50	20	0	100	4
	Drop Shipping	20	40	10	30	0	0	100	2
	Adding Call Center	10	10	50	30	0	0	100	3
	Rewards System	10	60	0	30	0	0	100	2
	Multilanguage service	50	10	10	30	0	0	100	1

I..Products Portfolio descriptions

A product portfolio Composed of all products since the first created it may include different categories of different products and production lines Including the latest updated version. There is therefore a need to manage all levels All three products a product portfolio. Production lines based on the latest management levels that have been updated. A product portfolio Depend on integrated vision of all production levels «it gives an integrated idea for developers. Figures (Fig 1 – Fig 3) represent description to our design to basic version, E-commerce description version 1, and version 2.

II. Creating new version features for e-commerce models:

The new creative way in this work is divided into two basics; the first was about how to renew the required features that light was shed on by the beneficiaries and the second was about how to make futuristic proposed e-commerce models according to the SPLE methodology based on the features that will be excluded or added. There is a proposal of three Standard models of the new product of the e-commerce based on the addition, deleting and modifying some of the properties that meet the requirements of the market according to the previous questionnaire.

The first model is called, “The Basic Model” which contains 40 properties. A questionnaire has been held on 10 of them and the models (V2, V3) have been produced by modifying some of the properties. Here, three Standard models of the e-commerce system have been determined.

1. The Basic Model:

This model has been constructed from the early phases of the analysis which have passed the technological development process of the e-commerce based on the SPLE Technologies that made it an integrated and general model. This model contains 40 properties have been shown in the questionnaire and 10 of it have been renewed after highlighting it as the for its impact on the e-commerce system.

The results of the intersection have appeared as shown in table (2), that refers to the importance of each feature has been questioned to the beneficiaries. These results will be the core for excluding any feature or keeping it from the proposed system “e-commerce proposed products for the proposed e-commerce using the SPLE technology”, that considered to be inputs for the next phase to be the final results to be relied on for designing the

System Purpose	E-Commerce Functions , Description
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<ul style="list-style-type: none"> ➤ Commercial and financial exchanges between the company and another company OR customers ➤ Commercial and financial exchanges between the government and company OR customer 	<ul style="list-style-type: none"> ➤ E_com_Basic_V_(Main System) ➤ Payment Methods (VP) ✓ Net banking sub system ✓ Credit card sub system ✓ Transaction sub system ✓ Payable ✓ Security system (VP) ✓ Traditional • Password • Security question ✓ Biometric (V_VP) • Finger print • Face detection • Iris ➤ Services system (VP) ✓ Item search (V_VP) • Name • Category • Price • Number ✓ Delivery (V_VP) • Downloading • Shipping • Writing • Drop shipping ✓ Language ✓ Customer profile (V_VP) ✓ Personal information ✓ Address (V_V) • Shipping address • Billing address ✓ Notification • E-mail • SMS ➤ Buying and selling system (VP) ✓ B 2 B ✓ B 2 C ✓ G 2 B ✓ G 2 C ➤ Shopping card vie (VP) ✓ Public ✓ Member (V_VP) • Exchange reward • Personal reward • Collect reward
key performance	
<ul style="list-style-type: none"> ➤ Implementation of commercial exchange ➤ Implementation of a financial exchange ➤ Provide services ➤ For Proposals Buyer and announcements ➤ Defining law 	
Boundary	
<ul style="list-style-type: none"> ➤ Dealing company to company or customer ➤ Government to the company or customer 	
System Requirements	
<ul style="list-style-type: none"> ➤ Input user or system ➤ Implementation tasks group ➤ Sub_system ➤ Relationship sub_system with environment ➤ Relationship between sub_system with others ➤ Output services or information or Queries ➤ Issue reports ➤ Feedback to reuse sub_system 	
Environment	
<ul style="list-style-type: none"> ➤ Using available network ➤ Using hardware & software ➤ Using different database ➤ Using different protocols 	<p>Description details E Com Basic</p> <ul style="list-style-type: none"> ➤ We keep all features in this version because it is basic ➤ This version keep all features and Considered it as basic

Figure 1. Create Basic version of e-commerce model

2.The Second Version:

This model has been produced through the derivation process of the basic model based on the

results of the general questionnaire we got, which showed the desire and the meet of the market need in the First Phase. After distributing it, it has been

modified and added to 8 properties from 10 that have been questioned. The model has been produced titled by (V1) to meet the market desire for the virtual period of the second year. This model has gained a high acceptability as

well as big demand that led the developers to distribute it again for the questionnaire to know what to do for either its development or its modification for the production in the next year

System purpose	E-Commerce Functions , Description
<ul style="list-style-type: none"> ➤ Commercial and financial exchanges between the company and another company OR customers ➤ Commercial and financial exchanges between the government and company OR customer 	<ul style="list-style-type: none"> ➤ E_com_V1_system ➤ Payment Methods (VP) ✓ Net banking sub system (Elimination by questionnaire) ✓ Credit card sub system ✓ Transaction sub system ✓ Payable ➤ Security system (VP) ✓ Traditional ✓ Biometric ➤ Services system (VP) ✓ Item search • Name • Category • Price (indifferent requirement) underwent questionnaire • Number ✓ Delivery • Downloading • Shipping (indifferent requirement) underwent questionnaire • Writing • Drop shipping (Satisfiers by Questionnaire) ✓ Language (Basic Requirement) by questionnaire ✓ Customer profile • Personal information (indifferent requirement) by questionnaire • Shipping address • Billing address (Questionable) underwent questionnaire ✓ Notification • E-mail • SMS • Call Center (delighters) Added by questionnaire ➤ Buying and selling system (VP) ✓ B 2 B ✓ B 2 C ✓ G 2 B ✓ G 2 C ➤ Shopping card vie (VP) ✓ Public ✓ Member • Exchange reward • Personal reward(Satisfiers by Questionnaire) • Collect reward
key performance	
<ul style="list-style-type: none"> ➤ Implementation of commercial exchange ➤ Implementation of a financial exchange ➤ Provide services For Proposals Buyer and announcements ➤ Defining law 	
Boundary	
<ul style="list-style-type: none"> ➤ Dealing company to company or customer ➤ Government to the company or customer 	
System Requirements	
<ul style="list-style-type: none"> ➤ Input user or system ➤ Implementation tasks group ➤ Sub_system ➤ Relationship sub_system with environment ➤ Relationship between sub_system with others ➤ Output services or information or Queries ➤ Issue reports ➤ Feedback to reuse sub_system 	
Environment	Description details E Com_V1
<ul style="list-style-type: none"> ➤ Using available network ➤ Using hardware & software ➤ Using different database ➤ Using different protocols 	<ul style="list-style-type: none"> ➤ We selected 10 features of the questionnaire ➤ According to the questionnaire were deleted Net banking While retaining all features ➤ Adding new features according to the questionnaire as call center ➤ Varied questionnaires to the rest of the properties among (basic requirement ,satisfiers ,delighters indifferent requirement , questionable)





Features Elimination by questionnaire		delighters) Added by questionnaire	
underwent questionnaire		Features has not been reported questionnaire	

Figure 2. Create version 2 of e-commerce model

3. The Third Version:

After distributing the model for the questionnaire for the third year, a development on only one feature seemed to be mandatory. Also, it has been noticed that the second model was constructed upon an actual questionnaire meets the needs of the users and

the market in a high accuracy. After finishing this model, a full production line has been built on the portfolio of the e-commerce product based on the SPLE technology that deals with the Mass product of the production lines, which eases the process of design and development in the next phases.

System purpose	E-Commerce Functions , Description
<ul style="list-style-type: none"> ➤ Commercial and financial exchanges between the company and another company OR customers ➤ Commercial and financial exchanges between the government and company OR customer 	<ul style="list-style-type: none"> ➤ E_com_V2_system ➤ Payment Methods (VP) ✓ Net banking sub system (Elimination by questionnaire) ✓ Credit card sub system ✓ Transaction sub system ✓ Payable ✓ Debit Card(delighters) Added by questionnaire ➤ Security system (VP) ✓ Traditional ✓ Biometric ➤ Services system (VP) ✓ Item search • Name • Category • Price (indifferent requirement) underwent questionnaire • Number ✓ Delivery • Downloading • Shipping (indifferent requirement) underwent questionnaire • Writing • Drop shipping (Satisfiers by Questionnaire) ✓ Language (Basic Requirement) by questionnaire ✓ Customer profile • Personal information (indifferent requirement) by questionnaire • Shipping address • Billing address (Elimination by questionnaire) ✓ Notification • E-mail • SMS • Call Center (delighters) Added by questionnaire ➤ Buying and selling system (VP) ✓ B 2 B ✓ B 2 C ✓ G 2 B ✓ G 2 C ➤ Shopping card vie (VP) ✓ Public ✓ Member • Exchange reward • Personal reward(Satisfiers by Questionnaire) • Collect reward
key performance	
<ul style="list-style-type: none"> ➤ Implementation of commercial exchange ➤ Implementation of a financial exchange ➤ Provide services ➤ For Proposals Buyer and announcements ➤ Defining law 	
Boundary	
<ul style="list-style-type: none"> ➤ Dealing company to company or customer ➤ Government to the company or customer 	
system Requirements	
<ul style="list-style-type: none"> ➤ Input user or system ➤ Implementation tasks group ➤ Sub_system ➤ Relationship sub_system with environment ➤ Relationship between sub_system with others ➤ Output services or information or Queries ➤ Issue reports ➤ Feedback to reuse sub_system 	




Environment	Description details E_Com_V2
<ul style="list-style-type: none"> ➤ Using available network ➤ Using hardware & software ➤ Using different database ➤ Using different protocols 	<ul style="list-style-type: none"> ➤ We selected 10 features of the questionnaire ➤ According to the questionnaire were deleted Billing Address and Net banking While retaining all features ➤ Adding new features according to the questionnaires Debit card in payment and Call Center in Notification ➤ Varied questionnaires to the rest of the properties among (basic requirement ,satisfiers ,delighters indifferent requirement , questionable)
	<p style="text-align: center;">Features Elimination by questionnaire delighters Added by questionnaire</p>
	<p style="text-align: center;">underwent questionnaire Features has not been reported questionnaire </p>

Figure 3. Create version 3 of e-commerce model

4.Roadmap of Products:

The main objective of using a road map for any product is Build an effective way to communicate between team members and developers and who will be using this system by them. The roadmaps for any product is a continuous communication process Throughout the production period Requirements and characteristics are generated and updated By many associated people such as (Developers, Partners, Administration, Support and maintenance, Processors, Engineering, Customers, Product Management, stockholders ..). Figure (4) represents the road map of basic, version 1 and version 2 of proposed e-commerce system.

5.Proposed Roadmap to the new E-commerce model:

In this paper , a new proposed roadmap give view point to practitioners and designer how to implement this model and deals with new feature that we get from questioners and mathematical static that built on real answer for all questioners , constructing and communicating in all production phases of the e-commerce model producing according to the SPLE methodology with its final phases requires constructing a Roadmap with high accuracy to achieve the goal; design and constructing the Mass product of the e-commerce. This Roadmap deals clearly and in detail with the specialists of development on the one hand, and with the beneficiaries on the other hand. We can notice that this hybrid way of development that used by the researchers in to draw a Roadmap with high

accuracy to meet the needs, the below figure (4) shows the phases of development that the product has passed in a period of time divided into virtually three years. The first basic model has been produced in the first year which included all the proposed properties of the system which is the core structure of the e-commerce based on the SPLE technology. The second model has been produced in the second year, but with some changes as deleting and adding some properties according to the previous questionnaire. The third model has been produce in the third and the last year, which includes all the properties that have been highlighted by the beneficiaries; (the Stakeholders) and the specialists without exception. The production of the Portfolio for any product process is subject to a road map with high accuracy.

The results of this study has got it with high accuracy reaching up to 93%. through compare between all questioners made along two years ago. as it's based on the Kano Model to make the questionnaire that included the researchers, the specialists, the interested ones and the using of hybrid technology to make a Roadmap and producing the three versions model for e-commerce through a period of three years and to develop the product according to the SPLE technology. These results showed the desire of the stakeholders” the beneficiaries” and how to develop the product according to a scientific engineering vision concerns with the interior design, the designers and the programmers on the one hand and among the stakeholders on the other hand.

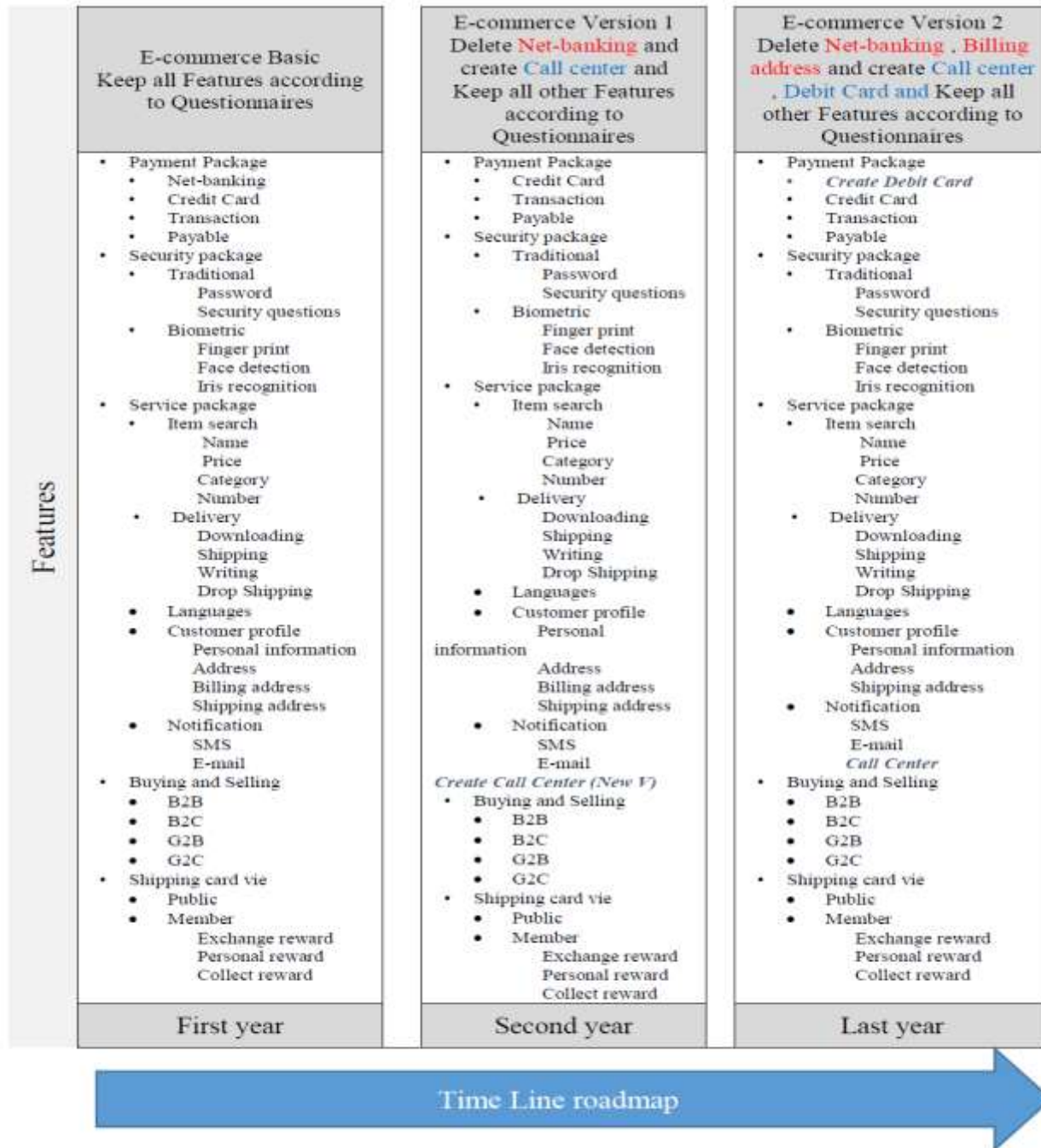


Figure 4. Roadmap and three version of e-commerce model

6. Conclusion

In this paper, a new proposed model to find features after implementation domain engineering, to construct production models according to the SPLE standards isn't an easy issue, but there are ways and tools that enable the practitioners and designers to use to facilitate the process of the design and

development. Through this paper, we conclude that using the questionnaire in a scientific way through a special website for this purpose, in addition to the paper-based questionnaire and to take variety of opinions from many segments of the society in the market, which gives more accurate results, also using the Kano Model has its clear impact in how to

facilitate and give real results with very high percentages. We have used these technologies and tools for creating the new hybrid way and constructing a Roadmap that gives an integrated vision to be able to determine accurately what meets the stakeholders' requirements and the designers. A standard scalable model has been produced in the next phases.

future work

we are planning to complete the Application Engineering entirely for the standard model of the e-commerce based on the SPLE technology. In addition, to preparing for implementation these three versions model in the real world, we will be implemented there with all version.

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