Abstract—this paper aims to highlight the importance and need for consumers’ engagement as co – innovators in the product development process or innovative activities within organizational context. The research will be conducted based on analysis of value co – creation process as the trigger for innovation, the consumers as drivers for product design and development, the need of internet of things as driver for co – innovation and the emergence of platforms as key instruments for pro – active consumers’ engagement. Thus the foreseeable outcome is to show how organizations are adapting to digitalized innovation and are enhancing pro – active collaboration in order to explore new market opportunities through platform implementation. Based on case study of Electrolux company, there will be highlighted the most important drivers of co – innovation, such as organizational structure, policies, strategies and occurred concerns of innovation and the platform implementation as pro – active consumers’ engagement through creative ideas, design and need for change.

Keywords— collaboration, consumers’ engagement, digitalized innovation, platform

I. INTRODUCTION

The value co – creation concept emerged as necessity to reassess organizational development and market opportunities. As the internet of things perspective began to evolve, the major concerns appeared to be linked to virtual environments and digitalized processes and activities. From this point of view the organizations were obligated to reevaluate their capabilities and to align to new technological as well as innovation changes. The value co – production, as it was in early stages of development, gradually moved to the concept of value co – creation. The understanding of these changes led to the need for product design and development in a creative and customer - centric way. Research & Development activities gained special attention as main drivers for change or for implementing innovation. However, solely to innovate is not sufficient to gain competitive advantage, as competition is growing and new opportunities and challenges emerge. At this rate, placing the innovation at the core of product design and development is not the main enough.

As new economic structures, such as value chain, value network, business ecosystems, etc., emerged it can be noticed that the innovation is linked to the customer or consumers’ engagement into value, product or service design and development [1]. However it is not a standalone concept, basically innovation brings together all creative ideas, enhanced into specific approach so that it could create value for stakeholders [2]. Thus the most important issue to address to is how this value is shared and who benefit from it. As Lee at.al and Russo – Spena and Mele stated, value could be created and shared through collaboration [1], [2].

From this point of view, this paper aims to explore the extent to which innovation is interrelated with consumers or customers appearance as main drivers for organizational change and growth.

II. CO-CREATON IN INNOVATION

Sandmeier et.al acknowledge the importance of customer integration into innovative process of product development [3], however the authors pointed the importance of users experience, knowledge, preferences and solutions [3] as well as organizational need for change. Thus it is defined the importance of open innovation as organizational ability to adapt to changes [3].

A. Open Innovation perspective

The open innovation theory accepts the principle of alignment of organization from internal as well as external point of view [4]. Gassman et.al identified nine different perspectives which reflect the nature of open innovation:
1) **Space** — the globalization of innovation. Basically this perspective reflects the Research & Development activities acquire resources from the external environments [4];

2) **Structure** — requires co – specialization and cost reduction in order to create complex technologies and products [4]. Thus the main focus is not only on short – term research and development activities, but also on customer – centric R&D and innovation [4].

3) **Users** – their integration should be supported and acquired in the innovation process, starting from the idea generation phase [4].

4) **Supplier** – their integration into innovation process at early stages increase the performance of innovation [4, 5]

5) **Leverage** – require excellent research competencies for technology creation and intellectual property rights involvement [4]

6) **Process** – describe the direction of development of innovation processes. However in case of open innovation the dominance of external – internal innovation is observed [4]

7) **Tools** – the creation of specific instruments or other relevant tools enable customers to develop their own product concept [4]. They become idea generators and creators.

8) **Institutions** – Gassman et. al consider innovation as an individual – collective effort or innovation. Thus it is important to define the main concerns or opportunities arising from this linkage [4]

9) **Culture** – represents the values, competencies, concerns and strategic or innovative thinking. It is about finding the artifacts which sustain innovation [4]

Chesbrough pointed the importance of open innovation in organizational development. The author stated that it is necessary for companies to innovate their business models first [6]. The author also pointed the importance of internal and external ideas as well as path to markets usage as necessary options for companies to innovate [6].

However the idea adoption requires a precise and iterative analysis and evaluation, so that it could be used in product design and development process [7]. The externalization of innovation provides an easy access to the consumers’ needs and market opportunities in order to create innovative solutions [7].

**B. Customers’ engagement into innovation process**

As the need for innovation increased, the companies started to be aware of the customers’ importance as main driver for growth and development. Thus the lead users can be distinguished through [8, 9]:

1) **They can anticipate the market need, way ahead before these needs occur**;

2) **Provide the solutions and benefit from these needs**

The links between customers and companies’ innovation process requires specific relations between them. From this point of view, the collaboration should be based on [10]:

1) **Mutual commitment** – express the importance of partnerships in co – design and product development process, sustaining long – term interactions through willingness to invest, desire to make sacrifices and long – term interactions [10];

2) **Mutual trust** – suggests the honesty and competence from both sides, the companies, as well as the customers [10];

3) **Mutual adaptations** – the collaboration should be based on the history, experience and strategies developed in order to gain customers’ loyalty and facilitate knowledge transfer [10]

4) **Mutual relationship** – it is required to establish specific goals, social and structural links and behavior in order to engage customers into collaborative relations [10]

Thus the information gained from the customers should be protected. From this point of view the companies implement the intellectual property policies, which support the voluntary and non-disclosure exchange of data or other relevant information between the company and lead users [11]. However voluntary disclosure of users’ innovation create the opportunity for its diffusion [11]. Basically customers benefit from the effects of their implemented innovation [11].

From this point of view it is important to design new business models, which involve key users or end – users not only as beneficiaries of product innovation, but also as critics, evaluators and co – designers [12]. This implies the companies to understand the customers’ background and to ensure their contribution to products and / or services design and development. It is about how customers’ knowledge and skills are enhanced into designing innovation [12].

The role of customers as co – designers was highlighted by Chesbrough in 2011. The author specified that customers are the most important product critics [13]. They can compare the product features with those of complementary, so that they can make the right choice [13]. Thus, the companies should explore precisely the previous customers’ experience, as well as its own past activities [13]. Basically the companies should exceed the expectations and simply satisfy the customers’ need. Instead they should work with the end – users by collecting, analyzing and predicting future customer behavior [13].

**C. Need for platform development**

Although open innovation gained an important influence upon product design and development, there is still necessity to align and adapt to consumers’ needs and dynamics. Chesbrough pointed that innovation should be represented by the balance between standardization and customization [6]. Thus it is important to define and create instruments or other relevant tools – the platforms,
which create the opportunities for interaction between companies and the customers, or other stakeholders. Thus, these platforms are defined by a set of technologies, brought together, in common architecture, in order to achieve customization [6]. Basically the companies should possess the skills for technology integration, to combine them in a useful way and to make them useful for end – users [6]. However, the author stated that a platform depends on companies’ business models in order to be successful and to engage customers or other stakeholders to join the platform [6].

III. RESEARCH APPROACH AND CASE STUDY

The aims of this paper are to identify how companies are implementing innovation issues as value creation and the pro – active customers’ engagement as mechanism of co – creation, basically it is about co – innovation.

As it was stated before, co – innovation depends on several important aspects such as company and customers’ experience, strategic directions and innovation strategies, motivation of customers to get involve in the product design and development.

From this point of there are defined three main direction of research:

1) Company’s profile, aims to describe the company from the general point of view, the previous experience in innovation involvement (evolution and product development) and the structural organization to promote innovation from inside;

2) Strategic orientation, there are defined and described the strategic opportunities, the main concerns, strategies and policies that facilitated and promoted the co – innovation;

3) The consumers’ engagement, describe de linkage between company and the consumers, the ways of creating interactions;

4) Platform creation and implementation, comprises the description of company’s experience and platform evolvement, the most important features of platform for mutual interactions, as well as the overall performance of the platform implementation on company’s activity.

IV. INNOVATION AT ELECTROLUX AG

Established in 1919, Electrolux AG, with headquarter at Stockholm, Sweden, with over 61000 employees, currently is the leader on the market of small and major appliances [14]. Company’s visibility is identified in over 150 countries from North and Latin America, Europe, Asia, Argentina [15]. Remarkable through commercialized brands, such as Electrolux, Zanussi, AEG, Frigidaire, Electrolux Grand Cuisine, in 2013 company reported over 50 million sold products and over 109 milliard profit [14]. The wide product range comprises vacuum cleaners, washing and dishwashing machines, ovens, air conditioning solutions and small appliances.

Electrolux AG is a public Swedish limited liability company, with shares listed at NASDAQ OMX and it is comprised from over 156 of companies with global coverage [14, 15]. The main business areas with shares of sales of Electrolux AG are [16]:

1) Major Appliances in Europe, Middle East and Africa (31 %)
2) Major Appliances North America (29 %)
3) Major Appliances Latin America (19 %)
4) Major Appliances Asia – Pacific (8 %)
5) Small Appliances (8 %)
6) Professional Appliances (5 %)

A. Company’s Profile - history at a glance

It has been over 90 years of innovation for Electrolux AG. Starting from 1908, when founder of future Electrolux AG Axel Wenner Gren identified first opportunity to commercialize the vacuum cleaners [17]. However this first trial was not successful. The real success came in 1912, when AB Lux and Elektromekaniska started to manufacture the Swedish vacuum cleaners, similar to those form Santos, America [18]. Over 90 years vacuum cleaners represents for Electrolux AG an anchor point for development of company as well as the range of products. Other important key historical moments are presented in table I.

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>HISTORICAL KEY MOMENTS [19 - 24]</th>
</tr>
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<tbody>
<tr>
<td>Period</td>
<td>Key Aspect</td>
</tr>
<tr>
<td>1920 – 1929</td>
<td>Extended product range</td>
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<tr>
<td></td>
<td>Launching the first refrigerators</td>
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<td></td>
<td>The acquisition of AB Arctic</td>
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<td>1940 – 1949</td>
<td>Reducing Electrolux plants’ activity</td>
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<tr>
<td>1950 – 1959</td>
<td>Manufacturing of air filters for Swedish Air Force</td>
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<tr>
<td></td>
<td>Manufacturing of washing machines</td>
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<tr>
<td>1960 – 1969</td>
<td>Development of new vacuum cleaner models</td>
</tr>
<tr>
<td></td>
<td>New name and new logo – Electrolux became Electrolux</td>
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<tr>
<td>1990 – 1999</td>
<td>Establishing of Design Department at Electrolux AG</td>
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<tr>
<td></td>
<td>Restructuring the entire company</td>
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<tr>
<td></td>
<td>Implementation of new on-line and build-in communication into the products</td>
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<tr>
<td>2000 – 2009</td>
<td>First competition Electrolux Design Lab</td>
</tr>
<tr>
<td></td>
<td>Pro-active consumers’ engagement orientation</td>
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</tbody>
</table>

The company known an impressive development not only from the growing point of view, but also in products evolution and development through increasing innovation implementation. The product design and development were influenced by the necessity to assess the customer perspective [25]. Since 2000, after the company’s restructuration, Electrolux started to implement new technologies such as: the use of coolers (for range of refrigerators) [26], special air filters, the use of anti – dust bags (for vacuum cleaners), leaning front
drum (for washing machines) [27], new automatic washing cycles and auto – cleaning function, vocal recognition [28]. However a few years later Electrolux understood the need of consumers’ engagement, so the entire product development process was restructured, as follows: market segmentation, problem research, consumers’ perspective, focus group, consumers’ perspective, and consumers’ laboratory, development of the concept, concept evaluation and product development [29]. Starting 2004, Electrolux discovered the importance not only of technical specifications, but also of ergonomics and the design of their products [29].

The approach “Thinking of you!” reflects the core values of the company, as well as the mission statement and the vision of the entire group [30] (table II).

TABLE II
MISSION, VISION AND VALUES [30]

<table>
<thead>
<tr>
<th>Electrolux</th>
<th>Key Aspect</th>
</tr>
</thead>
</table>
| Values           | Respect and diversity (diversified team from cultural, functional, discipline points of view) \  
|                  | Ethics and integrity (transparency and honesty) \  
|                  | Security and sustainability (passion for innovation – new opportunities for growth; the obsession for customers – respects consumers’ needs, desires and requirements; performance oriented – created value for consumers) |
| Mission statement| Addresses to all shareholders and is defined through financial results: global positioning, shareholders’ benefits |
| Vision perspective| Become global leader in appliances for consumers, employees and shareholders |

The innovation implementation, from structural point of view, is ensured by the “Innovation Triangle”, established in 2011 [31]. Represents a formal structure inside the company, which ensures the dialog and communication between marketing, Research & Development and Design departments in order to develop innovative, and user – friendly and appealing products [31].

B. Strategic orientation

Strategic orientation implies not only establishing and achieving of future goals and targets, but also creating necessary policies and evaluation of opportunities and arising concerns. From this point of view, Electrolux AG is promoting and implementing innovation as follows:

1) Policies

According to company’s philosophy, the consumer represents the key factor in product development. The implementation of Code of Ethics implies the implementation of behavior principles in relation with employees, shareholders, business partners and other relevant stakeholders. It is comprised from: Workplace Code of Conduct (ALFA – Awareness, Learning, Feedback, and Assessment) [32]. The Environmental Policy ensures trust and image building based on environmental and ethical values, the core of branding strategy [33]. Also it highlights the importance of improving production environment performance, the use of recycling materials, as well as reducing the negative impact on environment, wastes and pollution, respecting the sustainable development principles [33]. Branding Policy ensures the identification of new opportunities and increased growth by using the already established and successful brands through brand equity and loyalty [34]. The Remuneration Policy, is based on the “Grandparent principle” and ensures transparency and the fairness of selection and hiring processes inside de Electrolux AG [35].

2) Strategy development

The main strategy of the Electrolux Company is based on four essential pillars [36]: profitable growth (increasing sales in new markets, achieving strong position on premium segments, and the accelerating rate of innovation adoption) [36], [37], innovation (ensured by the Innovation Triangle, development and use of energy efficient technologies and water consume optimization, adoption and development of new energetic class type A+++++, implementing new LED technology) [38], operational excellence (realized through production process restructuring and scaling it up globally, sales and administration efficiency, gaining competitive advantage through developed products, use of platforms for reducing time and cost processing, implementation of Enterprise Resource Planning system, creation and implementation of design co – creation instruments ) [39], people and leadership (employees are seen as driving force for success, dedicated teams, implementation of innovative corporate culture) [40].

3) Arising innovation concerns

The “Thinking of You” Electrolux brand promise implies the necessity to implement the innovation. However, Electrolux discovered that development of new technology is not so important in relation to the needs and past experience of consumers. The greater importance is assessed by different combination of already existing technologies [41] in order to solve the unsolved problems and to respond to the consumers’ needs.

The main interest is still manifested for sustainable growth through energy efficiency, green products, reducing energy and water consumption [42].

The brand consolidation is primer concern, as it is associated to product performance. From this point of view the need of standards, of social or environmental nature, is a must and their implementation depends upon the engagement of company into composing, monitoring and engagement activities [42]. As employees are seen as driving force for innovation, Electrolux also participate to brand consolidation through core competences, cultural diversity and creation of new workplaces for its employees [42].

The social concerns is represented by the willingness
of Electrolux Company to participate to Corporate Social Responsibility standard development [43].

Other relevant strategic concerns are concretized through the need for sustainable innovation [44], increasing investment in innovation of products, marketing activities [45], recycling design [44], strong position on premium segments and global growth [45], professional expertise from Electrolux [30], ensuring the accessibility and efficiency of newly developed products and / or services [30], implementation of Talent Management [29].

C. Consumers’ engagement

The leading force for innovation implementation in Electrolux are the consumers. The company defines the consumers’ perspective as a knowledge process and precise and clear identification and transposal of needs and requirements into concrete actions. From this point of view, Electrolux established specific practices such as “home visits” or challenges for competition. Basically it shows the dual character of consumers: as co – designers and active participants [1]. The new product development process (Product Management Flow), Electrolux identified the need for creation and implementation of Innovation Program. According to this activity it is implemented the change from classic surveys to home visits [41]. Also it is implemented the observation method to gain the knowledge about immediate need of consumers, the classification of consumption needs and brainstorming in order to create prototype that responded to all the consumers’ requirements [41].

D. Platform creation and implementation

Although consumers’ knowledge is important, in co – innovation process the major impact is provided by the created instruments for measuring consumers’ engagement. Thus, Electrolux’s approach is about the challenge for competition, Electrolux Design Lab.

The specifications and description of the platform will be discussed in the second part of the present research.

V. DISCUSSION AND CONCLUSIONS

Nowadays, the main concern is concentrated on who and how companies should innovate in order to achieve a considerable growth. However the priority is to engage the consumers or customers into the main product development processes, including design stages.

From this point of view the consumers or consumers centric perspective provides the most valuable insights for companies. This perspective brought in front the key elements (consumers or customers) as an interactive and dynamic mechanism, as they should also participate in product design and development.

This paper aimed to present the main consideration about consumers as development and innovation driver based on Electrolux Company case study.

It was shown that innovation represents the main target for the company. The structure of organization was realized in 1999, when Electrolux identified the necessity to realign their strategy. However, the importance of innovation was highlighted almost 10 years later, by establishing The Innovation Triangle. The target was to understand and implement the interactions between marketing, design and Research and Development.

The experience and product development were linked to the knowledge of their customers and consumers. As result, Electrolux implemented a series of policies, in order to ensure the product sustainability, the Corporate Social Responsibility enhancement, the environmental and intellectual property protection.

The consumer or customer perspective evolved, company’s products were described by efficiency and optimized consumption of water or energy. As a significant part of their growth strategy, these products’ features ensured the competitive advantage on premium markets.

The interactions with employees, as potential consumers or customers, are considered as drivers for innovation. Thus the company’s mission statement and vision is about the innovation inside – out. However for other consumers or customers, Electrolux considered important the face – to – face approach, through home visits.

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