

APPLICATION OF USABILITY CONCEPTS IN WINE MARKETING: A MULTIDISCIPLINARY REVIEW

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Abstract

Various studies have shown that the wine consumption decline in young generation could be influenced by the perception of wine as intimidating and difficult to understand, and by the lack of adaptability of the product's communication strategy and packaging design to their lifestyle. Information available on the packaging is often complex and confusing for novice wine consumers and sometimes even irrelevant in regards to the intrinsic characteristics of the product. Furthermore, wine is seen by young adult consumers as old fashion, formal and mostly not associated with their relaxed attitude and "on the move" lifestyle. The objective of this paper is to analyse the usability key principles and heuristic and their applicability in wine marketing as a mean to improve the perception and increase understanding of wine for the young and/or novice consumers. The paper aims to review the existing knowledge and findings about the concept of usability (with special emphasis on Usability Engineering and Human Computer Interaction (HCI)), in order to explore the aspects applicable in wine marketing. The usability concept proves useful in wine marketing to simplify the decision process, to make the meeting with the product less intimidating and more engaging, and to decrease the risk perception for the inexperienced wine consumers.

Key words: usability concept, wine marketing, purchasing behaviour, user-centered design, young wine consumers.

INTRODUCTION

Wine is probably the single consumer good for which one could need a formal training to understand it, or at least to understand its label¹. This is why the curricula of many organizations integrates courses on several wine topics, including aspects regarding the terms used on wine labels (e.g. Wine & Spirit Education Trust).

From the average consumer's perspective, information about wine is difficult to understand and not useful or relevant for personal decision-making, and this is one of the reasons some of the consumers simply do not choose to buy wine. Studies show that young consumers of ages between 18 to 35, mostly referred as Millennials or Generation Y², although they do not avoid alcoholic beverages,

do not consume wine, because they don't understand the product and find it confusing (Thach and Olsen, 2006; Thach and d'Hauteville, 2008; Holter, 2009).

Even among wine consumers of all ages, an important segment finds wine intimidating, 19% of the wine consumers saying wine is "complex and overwhelming", which leads to the fact that they do not enjoy shopping for wine (Constellation Wines US, 2014).

The paper summarizes existing knowledge and findings about the concept of usability, with special emphasis on *Usability Engineering* and *Human Computer Interaction (HCI)*, and explores the aspects applicable in wine marketing.

The goal of this study is to analyse, from the perspective of average consumer, the usability of wine as a product.

The application of usability principles in wine marketing will make the interaction with the product more accessible and more engaging for the inexperienced wine consumers.

¹One of the topic included in the curricula of WSET Intermediate level course, organised by Wine and Spirit Education Trust, London, is "Factors Influencing the Style of Wine and Understanding the Label"

²The exact age (years of birth) vary, but the terms are found in relation to wine marketing in Thach and Olsen, 2006; Thach and d'Hauteville, 2008; Holter, 2009; Thach, 2011; Lockshin and Corsi, 2012.

Usability concept and its evolution

Usability represents the quality attribute of a product or service of being easy to use, from the user's perspective.

The ease of use implies rapid understanding of the product (or service), ease of use of the product (or service), comfort in use and meeting the user expectance regarding the use (McNamara and Kirakowski, 2006; Chowdhury and Chowdhury, 2011, Madan and Dubey, 2012).

Usability principles developed long ago, being used in different contexts, even before the term was defined. One of the first examples found in *The Five Laws of Library Science* by Ranganathan (1931) was the principles of operating libraries in order to better serve the users, which were as follows: 1. Books are for use; 2. Every reader his book; 3. Every book its reader; 4. Save the time of the reader; 5. The library is a growing organism.

Other authors extrapolated these principles to Web and to information (Noruzi, 2004; Chowdhury and Chowdhury, 2011) as seen in Table 1.

Even though these principles can appear as an oversimplification, they are laying the roots of usability as they are promoting ease of access, ease of use and efficiency (time saving concern), part of today's best practice.

The starting point for the concept of *usability* was the new area of *Software Psychology*, introduced by Shneiderman (1980), which makes integrates behavioural research into computer science in order to improve software design.

Although most of the papers published in that period in computer science was not in favour of improving the design process of software around the user needs, this direction was generally adopted later, starting with 1988, when Association for Computing Machinery (ACM) included *Human Computer Interaction* (HCI) as one of the principle areas of computer science discipline (Carroll, 1997).

HCI apply findings from numerous disciplines - Human factors and ergonomics, behavioural sciences, computer science and design - in order to study and improve the quality of the

interaction between people (users) and computers.

In 1988, the concept of *user-centered design* (UCD) was introduced in product design (Norman, 1990), a “philosophy” and methodology which integrated the needs and limitations of the end users of the product in the process design. *User-centered design* term evolved into *Human-centered design* and, later on, Norman advocated the further evolution into *Activity-centered design* based on the principle of knowing your user and understanding the activity for which the product is designed (Norman, 2005).

In computer sciences the concept of user-centered design is integrated in *Human Computer Interaction* (HCI). *Usability Engineering* is similar to *User-centered design* (Rubin and Chisnell, 2008), but usually the term is used in the context of software engineering (Nielsen, 1993; Carroll, 1997).

A comprehensive history of *HCI* and *Usability Engineering* is traced by Carroll (1997), which argues that a more unifying methodology in the area would be useful, predicting that HCI will generate applications in other areas of activity.

HCI and *usability* studies impact the lives of users worldwide, and their application has a positive outcome on the market value of software products (Carroll, 1997; Pearrow, 2007; Madan and Dubey, 2012).

Table 1. Principles for better serving the user

<i>The Five Laws applied to web resources</i>	<i>The Five Laws applied to information</i>
1. Web resources are for use.	1. Information is for use.
2. Every user his / her web resource.	2. Every user his / her [piece of] information.
3. Every web resource its user.	3. Every [piece of] information its user.
4. Save the time of the user.	4. Save the time of the user.
5. The Web is a growing organism.	5. Information is a growing organism.

Source: Noruzi (2004), Chowdhury and Chowdhury (2011)

For websites, e-commerce and software applications, the integration of usability in the marketing strategy of a product or service is essential. Various studies show that usability has a strong effect on user satisfaction and

website loyalty³ (Flavian et al., 2006) and, for e-commerce, on conversion and online sales (Juon et al., 2012).

Usability evaluation is applied wider, not only in computer sciences, but also in different other areas as Product design, Architecture and Interior design, Library and Information Sciences, Government or Public services (e.g. UK Government portal).

The *users* and *usability* concept were studied in different fields with various goals, from development of software systems, web products and e-commerce, in order to optimize and improve the user experience and error prevention, to information services and also to product and industrial design (Pearrow, 2007; Chowdhury and Chowdhury, 2011).

The application of usability principles proves useful in various fields, especially where users encounter interaction with complex systems, with large amount of information/complex information systems and or in public services.

Various studies apply usability principles in the most complex systems, as healthcare, government, education, the focus being on transparency, ease of information use and assuring general usability (as quality in use) in order to ensure that the provided products, services, and the facilities comply with the users' need (Alexander, 2010; Haron et al., 2010; Buie and Murray, 2012). Even in architecture, usability principles can be applied for assessing the quality attributes of the buildings (Olsson et al., 2010; Harun et al., 2011) or, in particular, of the workspaces (Kärnä and Nenonen, 2010).

The concept of *usability* is also used in Human Information Behaviour (HBI), which focuses on user behaviour regarding the process of searching, obtaining and employing information (Chowdhury and Chowdhury, 2011). Human Information Behaviour (HIB) is the main focus for government or private institutions which serve the public - healthcare services, public information center (online and offline), libraries, education system.

Usability is evaluated in information service for assuring efficient and effective access to information (Chowdhury and Chowdhury,

2011). For digital libraries usability addresses the interface, the content and the functionality of the system (Van House, 1996; Vrana, 2007; Chowdhury and Chowdhury, 2011). The improvements would have to take into consideration the level of knowledge of the users, their vocabulary and making easier the access to information by simplifying the forms and the search (Van House, 1996; Chowdhury and Chowdhury, 2011).

Usability is used to adapt the digital library services to the users' needs, to improve the access and efficient and effective use of information and to find new direction of evolution of the services.

The majority of scientific papers and research regarding usability and user behaviour is focusing on *Usability Engineering* and *Human Computer Interaction (HCI)*, while some others focus on *Human Information Behaviour (HIB)* (Asai, 2008; Chowdhury and Chowdhury, 2011; Hu et al., 2012; Madan and Dubey, 2012).

METHODS AND METHODOLOGIES FOR USABILITY CONCEPT APPLICATION

According to ISO 9241-11 Standard (Ergonomics of Human System Interaction, 1998), there are three basic parameters of usability: effectiveness, efficiency and satisfaction that should be analysed for specific users and in a specified context of use (International Organization for Standardization, 1998). Thus to evaluate the usability of a product, firstly the user to whom it is addressed must be stated, and secondly the user's needs taken into consideration (Norman, 1990; Ulrich, 2011; Chowdhury and Chowdhury, 2011; Goodman et al., 2012). Furthermore a clear understanding of the goal and the projected context of use, from the users' perspective, is essential for designing the product and evaluating the usability (Norman, 1990; Ulrich, 2011; Chowdhury and Chowdhury, 2011).

Most of the models of usability evolve around the key attributes of the product that are: ease of understanding, learnability and memorability, effective and efficient operability, user satisfaction, presented in Table 2 (Nielsen, 1993; ISO 1998, 2001; Quesenbery, 2003).

³The study focused on a variety of websites, for businesses ranging from financial services and travel services to book and music retailers.

Also error prevention and fast recovery from error is considered, along with the propriety of the product of being engaging (attractive) for the user (Nielsen, 1993; ISO, 2001; Quesenbery, 2003). An important aspect of these attributes is that they are correlated with characteristics of the product, the user and the context, so their importance will vary accordingly (Quesenbery, 2003), as seen in the example (Figure 1).

the user in using the product/ service in its specified activity/context.

Usability must be taken into account in all stages of the product development, from the initial product planning when the target users and the usability goals are defined, to prototype testing and to the final product evaluation.

In software engineering and HCI area, usability is a fundamental aspect of the quality of software applications and websites (Madan and Dubey, 2012).

Table 2. Usability Models

Model	Key Attributes	Description
Nielsen Model (1993)	Learnability	Easy to learn and to understand
	Efficiency	Related to productivity
	Memorability	For intermittent user– ability to understand rapid, when returning
	Errors	Minimum errors and easy recovery from errors
	Satisfaction	Positive emotions for users during and after using the product
ISO 9241-11 (1998)	Effectiveness	Successful completion of the user goal
	Efficiency	The quality of the results related to the time invested
	Satisfaction	Acceptability of a system by the user, in specified context of use.
ISO 9126 (2001)	Understandability	For software product – enable the user to understand how the software can be used, intuitive
	Learnability	For software product – easy to be learned (by the user)
	Operability	For software product – enable the user to operate and control it, with ease
	Attractiveness	The quality of being attractive for the user.
	Usability compliance	For software product – standards, conventions, style guides, or regulations related to usability.
TNR 5Es Quesenbery (2003)	Effective	Completeness and Accuracy in achieving the user goals
	Efficient	The speed to complete the task, with accuracy
	Engaging	The quality of the interface of being pleasant, satisfying or interesting
	Error Tolerant	Preventing and recovering from errors
	Easy to Learn	The quality of the product to be intuitive and encourage deeper learning

Adapted from Madan and Dubey (2012). Sources specified in the table (first column)



Figure 1. The five Es of usability
Source: Quesenbery, Whitney Interactive Design

Usability should be considered from the planning stage, in the design process of the product, when the particularities of the anticipated user, its needs and the expected use should be considered (Norman, 1990; Ulrich, 2011). The parameters and the measurements should be correlated with the specific goal of

The goal of the usability evaluation is to identify the problems that could appear in the use of the product or service, in order to improve the product, from the perspective of intuitiveness and ease of use, while also taking into consideration the cost implied for obtaining the improvement.

In this first stage, gathering data regarding the user, the specific context of the use and the tasks involved is necessary for defining the product requirements, which underlie the design of the product serving as basis for the usability goals and objectives.

This research can be part of the initial marketing research or conducted separately as part of the design process and involves a qualitative study, in which the targeted users are observed in the context where they would normally use the product or other similar

products (Rubin and Chisnell, 2008). The data obtained will help integrate usability enhancements in product core design from the beginning (Ulrich, 2011), better understand and elaborate the user profile and the specificity of the context of use and, in software engineering and HCI, to develop *personas*, scenarios and the task description (Rubin and Chisnell, 2008). Some authors called this *ethnographic research*, *contextual inquiry* or simply *observation* of the user, (Nielsen 1993; Raven and Flanders, 1996; Rubin and Chisnell, 2008), and this is useful in defining the usability goals and objectives or in identifying unanticipated patterns of usage of the product.

According to Rubin and Chisnell (2008) the most appropriate methodology to be used in usability testing, would be controlled experiments, but in practice this is adapted, as follows:

- Defining the test questions and objectives, according to the usability goals;
- Choosing the users to be similar with the intended users (but in practice the number of the users will not make the sample representative);
- The environment should reflect the actual context of use;
- The method of observation - observing the users while using or evaluating the product (a prototype) or a representation of the product.
- Control of the experiment by controlling the environment and the tasks
- Gather quantitative and qualitative data, regarding to performance and preferences, using an observer.
- Data analysis and recommendation.

According to Nielsen and Mack (1994), the usability can be evaluated with different methods: automatically (using automated software tools), empirically (usability testing with users), formally (using formulas to calculate usability measurements) and informally (using specialised evaluators). The usability evaluation methods most commonly used, are user-based (*empirically*) and expert-based (*informally*) and a combination of both assure best results (Nielsen and Mack, 1994; Rubin and Chisnell, 2008). First is the category of usability testing which involves real users, and there are variation regarding the

environment, the type of feedback, the degree of the control of what is to be tested.

Laboratory Usability Testing is one of the first types of evaluation used, and it is conducted in a controlled environment and involves real users and an observer, not visible for the user, both being present at the same time in the same location. The users would individually test the performance of the product regarding measurable aspects (time for completed task, number of errors, errors and successful interaction ratio, time spent recovering from errors, the incidence of help usage, the number of product features that can be recalled, and so on) and the observer will suggest the users to “think out loud” with adjutant questions (Nielsen 1993; Juon et al., 2012). Another alternative is to have two test users testing the same product in the same time, which will replace thinking aloud with the discussion occurred between them when attempting and use the product, this technique called constructive interaction. The benefits of this technique lie in a more natural feedback of the usage, but the cost is increased by the doubled number of participants (Nielsen, 1993).

Remote Usability testing is relatively similar to laboratory usability testing, with the main difference that it involves the use of external software tools to observe the activity of the participants (users) that are in other locations (Juon et al., 2012).

In *Participatory Design*, one or more users are continuously involved in the design process, as they test and evaluate different prototypes of products in order to improve the product to respond to their needs (Rubin and Chisnell, 2008). One of the key aspects of user-based testing is the selection of the test participants in accordance to the targeted users. As the scope of the user testing is mainly to identify usability problems early in order to solve them in the final design, while taking into consideration the cost, the most advisable approach is to have more tests, with fewer participants, instead of just one test (Nielsen, 1993). From the perspective of optimal number of test participants, based on comparison of different projects, Nielsen (1993) estimated that 3 users will generate the most advantageous ratio between benefits and costs and 15 users reaches the point after which the benefit will exceed the cost. The main problem

of selecting the relevant test participants comes from the “huge individual differences between users” (Nielsen, 1993), mainly due to their level of expertise. Furthermore, Rubin and Chisnell (2008) highlight that the simulation of the actual context of use could influence the validity of the test results and also that of the lack of usability deficiency shown in tests does not always mean that the product is working properly.

The second category are usability inspection methods (or expert evaluations), which involve the use of one or more inspectors (evaluators), usually usability or human factors specialist, which will evaluate the product according to usability guidelines. This methods are used primarily in HCI, and some of them are: cognitive walkthroughs (Wharton et al., 1994), claims analysis (Carroll; 1998) and heuristic evaluation (Nielsen, 1993). Cognitive walkthrough is a method of usability evaluation, which verify how easily a user could learn and use a product or a system, taking into consideration the preference of some users to empirical learn to use a product (which usually mean also not reading the user manual). An actual task-specific route of the user is drawn, and the reviews follow the step of the user on this route, in order to identify usability problems. Claims analysis imply the investigation the effects of a particular design on future use, compare the positive and the negative implications, and consider them in operating improvements to the design of the product. In heuristic evaluation, a few specialised evaluators analyse the product, individually, using a set of usability principles (‘heuristics’) and their results are compiled (Nielsen, 1993).

This is used mainly for assessing usability of user interface and permit evaluation even for the products that are in the planning / sketching stages (early mock-ups). The method allows identifying the predictable usability issues and is recommended to be used in early stages of the development process of the product, and before usability testing with real user. Other usability evaluation methods used are: questionnaires and interviews; focus groups; and analyzing the logging data of actual use (record of events collected automatically by software during the usage of the product) (Nielsen, 1993; Rubin and Chisnell, 2008).

There is a lack of standardized measurements and methodology regarding usability evaluation identified by authors (Carroll, 1997; Madan and Dubey, 2012). Others pointed out the low statistical power and random heterogeneity of variance of some of the Usability Evaluation Methods, which could be prevented by a more rigorous application of standard statistical techniques (Gray and Salzman, 1998). But the main purpose of usability evaluation is to obtain feedback from the user regarding his/her experience with the product and integrate it in the (iterative) design process to obtain an optimum usability level, while considering the costs (Nielsen, 1993).

Increasing wine usability through information design

When designing a product to suit the user needs and goals, findings from behavioral and cognitive psychology should be integrated in exploration, in order to improve its usability.

The visual aspect have important implications in any product, as for the human cognitive response, the aesthetic response is instant and involuntary, occurring before analytical response, and have a major impact on the preference (Ulrich, 2011). But more that its aesthetic role, graphic design serves also a functional/utilitarian role, by the contribution of the information design to improve “clarity of the communication” (Pettersen, 2004). Our visual intelligence uses cues from imagery to recognise, and structure information to facilitate understanding (Hoffman, 1998). The graphic design could contribute to implementation of usability in the all the communication materials regarding the product. The usability of texts is of much interest for military industry and for other industries where human error can generate accidents (Duffy, 2014; Norman, 1990). Carter (2014) elaborates on criteria of creating usable text, by their usability and effectiveness, and considers critical, to first correctly identify the audience (the intended users of the text), the purpose and the context of use. Olson (2014) further emphasises that the text should aim to be explicit, because most of the time the presumed prior or contextual knowledge of the intended user, is erroneous, and will have negative effect on comprehension. This is

common in wine communication where most of the information either imply previous knowledge or is too abstract to be useful.

From the visual perspective, usability of the information about a product can be improved by implementing principles from graphic design and using information visualization as a mean of improving cognition. One of the principles of graphic design is visual hierarchy, which imply that the (graphic) composition / layout of the content should communicate the relative importance of the elements (of the content) to the user, creating meaning.

The goal of the visual hierarchy is to help user intuitively understand and receive the most important information first and have a mental structure of the content, following his natural inclination of organising information, explained by Gestalt theory (Graham, 2008). These can be achieved by using contrast (in size, weight of the font, colour), proximity (elements positioned closely to one another being perceived as part of a group), closure and continuation (Graham, 2008). Information visualization represents “the use of interactive visual representations of abstract data to amplify cognition” (Ware, 2004). Findings from applied psychology reveal that the use of different areas of the brain simultaneous, when operating with visual and verbal information, has a positive effect on the long term memory. Information visualization applies this for representing concepts with both visual and verbal information in order to be easily understood and learned (Ware, 2004). This could be useful on the label of product to improve *Understandability* and of complex information, improving usability of the products. Other information visualization principle applicable for improving usability (*Learnability* and *Memorability*) refers to localization information, which was found to be better understood and memorized when represented visually (Ware, 2004). In wine too, understanding the user, his level of knowledge and the hierarchy of his needs, and implementing this by the use of visual diarchy will allow to communicate the information considered important from his/her perspective. The principles of user-centered design (UCD), based on cognitive psychology, can be applied in designing any type of product and also in wine, from the perspective of the usability of

(information available on) the label and the design of the package. Don Norman (1990) elaborated UCD principles, transforming difficult tasks into simple ones and argued that a good design process uses the “natural properties” of people and the constraints, to create products easy to understand and use without instructions. Norman (1990) suggests optimising the product (and the interface or the product) in accordance with the natural inclinations and cognitive limitations of the user and not expecting the user to make supplementary effort to adapt to the product, which could cause frustration. People are inclined to construct theories (mental models) about the things around them as a mean of understanding and predicting experiences in their life, and insufficient (or irrelevant) information will generate erroneous assumption. Norman (1990) argues that a good design takes into consideration integrating visual cues to intuitively help the user understand how to use the product.

The 7 principles of UCD developed by Don Norman (1990) are:

1. Integrating “knowledge in the world” and “knowledge in the head” in design. First is referring to the *knowledge of* (declarative knowledge), rules and facts that the users are aware and can utilise them without memorising them and second is procedural knowledge, which involves memorising and know how. This rule implies that the designer would understand the particularities of different types of knowledge and use them in the design to make the product more intuitive / easy to use.
2. “Simplify the structure of tasks”. This implies that the designer is aware of the user’s cognitive limitations (attention, short and long-term memory) and would consider them in order to minimize the planning and the problem solving required in executing tasks (in the process of using the product) and “provide mental aid”.
3. “Make things visible: bridge the gulfs of Execution and Evaluation”. This rule implies that the product should have visual signals on how it works/ is to be used, that the user can intuit how the product can be used.
4. Make use of mappings. The controls and the visual information of the product would be

arranged in a logical manner (natural mapping), easy to understand for the user.

5. Use of natural and artificial constraints, in designing the product in order to limit the options, directing the user towards the right course of actions (in using the product).

6. "Design for error". This rule implies that the apparition of error is likely and the products and their interfaces should be designed to prevent and help recover from errors.

7. "When all else fails, standardize". Standards are useful, as long as everyone knows them; new ones should be generated only after other attempts for make the product intuitive, by use of "natural mapping" failed.

Even thaw these principles were created for industrial (product) design, they can be integrated in wine industry for the design of a new type of wine packaging, adapted to the user needs and new context of use and also for improving the usability of the information regarding the product.

IMPLEMENTING USABILITY IN WINE MARKETING

The present paper advances the adoption of the concept of *usability* in wine marketing in order to create more intuitive and easier to use wine products that will respond to the needs of the inexperienced consumers. This will help the industry address a significant market opportunity, by reaching the segment of consumers that avoid wine, due to its complexity and lack of understanding of the product.

For most of the present everyday life products and services, ease of use and of understanding is an essential part of their marketing strategy. This is most evident in virtual and material technologies, where usability is regarded as an important competitive advantage (Kuniavsky, 2003).

Following the usability principles, for the first step of the present analysis, we identified the targeted user and its goal, needs and expectations, along with the context of use, which will be the bases for usability.

The profile of the user for the present analysis is based on previous studies and includes the segment of consumers who prefer other types

of beverages to wine, for reasons that can be associated with lack of usability of the product. As shown in Table 3, findings indicate that the way the wine is communicated confuses some users (1.1.) and defer others, especially young consumers (1.2.-1.5) which prefer other alcoholic beverages to wine.

The findings shown in 1.1.-1.5. in Table 3 does not allow a generalisation across all markets, but show that different segments of customers in different geographical areas have been identified to encounter some degree of customer confusion, from difficulties in understanding the product to the state of being intimidate by the complexity of the product, which justify the need to address this problem. The issues of *choice overload* and *consumer confusion* in general, were previously discussed (Mitchell et al., 2005; Schweizer et al., 2006), the conclusion being that such consumers either refrain from purchase or end up with suboptimal choice, that will generate dissatisfaction and most probably negative word-of-mouth. The complexity of the wine terminology makes it unappealing for the uninitiated in comparison to other alcoholic beverages.

Drummond and Rule (2005) analysed the wine marketing strategies, finding that the major contribution to consumer confusion can be attributed to "information overload", "product proliferation" (wide range of virtually similar products) and imitation. The same authors argue that extending the fine wine descriptors to all wine categories has a negative effect on consumers, making the information (on the label) unhelpful.

Casini et al. (2008) elaborates further, finding that the complexity of the terminology on the label together with too much and sometimes inconsistent information confuses the wine consumer. The authors also identify the aggressive promotions in retail, which sometimes imply artificially raising the price in order to allow illusory price-cuts, as contributing to confusion, by deferring consumers from developing an understanding of the value of the wines.

Table 3. Recent studies regarding customer confusion towards wine and some exploratory findings regarding young consumers' motivations, perceptions and lifestyle with implications on their relation with wine

Factor	Findings	Age	Geographical coverage	Study details	Source
1 Complexity of the product	1.1. A large segment of wine consumers of all age are "Overwhelmed", 19% in US; 21% in English Canada; 25% in Quebec. They consider wine intimidating and declare that "don't enjoy shopping for wine", because it is "complex and overwhelming"; The segment of wine consumers referred as "Engaged Newcomers" (12% in US; 24 % in English Canada; 25% in Quebec), consisting of mainly young consumers, see wine as an "intimidating category"	Consumers of all ages that consume wine at least once every three months	USA and Canada	Quantitative; Interviews Sample size: 4,000 in USA and 2,946 in Canada	Constellation Wines U.S. (2014)
	1.2. 15% of the young consumers consider "confusing" as suitable descriptor for wine Stated reason for not drinking wine, for young consumers: "I don't know about wine" (7%)	21-27 years old	USA, Northern California	Quantitative (Exploratory); Interviews (Sample size: 108)	Thach and Olsen (2006)
	1.3. 21% (US) and 29% (UK) of the young consumers say they "don't understand much about wine"	21-34 years old for USA; 18-34 years old for UK	USA, UK	Quantitative; Survey	Holter, 2009 (Study by Wine Intelligence)
	1.4. Stated reason for not drinking wine, for young consumers: wine is "adult-oriented, difficult to understand, and requiring a long process of initiation, compared to other alcoholic beverages"; (34% of the young people never or almost never drink wine; only 8% of the young consumers drink wine regularly)	18-35 years old	Spain	Mixed; Survey	Holter, 2009 (Study by Spanish Economic Observatory for Wine)
	1.5. Stated reason for not drinking wine, for young consumers: "Wine is confusing"	21-31 years old	France	Qualitative (Exploratory); In-depth interviews	Thach and d'Hauteville (2008)
2 Motivations	2.1. Motivations for consuming wine, other than taste: 24% for relaxation and euphoria (15% "It helps me relax; 9% "It gives me a happy buzz") and 20% because "It goes well with food"	21-27 years old	USA, Northern California	Quantitative (Exploratory); Interviews (Sample size: 108)	Thach and Olsen (2006)
	2.2. In relation to wine, Generation Y is more hedonically oriented (drinking wine for the experience and in social contexts) in comparison with previous generation	Consumers of all ages (over 21 years old)	Southwestern USA	Quantitative; Survey (Sample size: 239)	Kennett-Hensel et al. (2011)
	2.3. Motivations for consuming alcoholic beverages: 61% "having fun with friends"	18-35 years old	Italy, Tuscany	Qualitative (Exploratory); Multiple Factor Analysis (Sample size: 430)	Marinelli et al (2014)

	Factor	Findings	Age	Geographical coverage	Study details	Source
3	Perception	3.1. Beer associated with "Young", "Social", "Euphoric", "Happy", "Appealing", "Trendy" and wine associated with "Pleasure", "Quality", "Comfortable"	18-35 years old	Italy, Tuscany	Qualitative (Exploratory); Multiple Factor Analysis (Sample size: 430)	Marinelli et al (2014)
		3.2. Wine is seen as Traditional/Old	21-31 years old	France	Qualitative; In-depth interviews	Thach and d'Hauteville (2008)
		3.3. Wine is seen as "not cool" by 61% of the young consumers (total sample) and, from those that do not drink wine, one of the reasons was "It's too ritzy; not cool" (11%). Among of the most common descriptors for wine: "snobby", "snooty", and "Too serious". 19% of the young consumers suggested that wine marketing should be improved to address younger generation. Events associated with wine: Special or formal events (26%), Nice dinners (23%)	21-27 years old	USA, Northern California	Quantitative (Exploratory); Interviews (Sample size: 108)	Thach and Olsen (2006)
4	Lifestyle related needs	4.1. Dependent to context, the type of alcoholic beverages preferred of young consumers differ: indoor - wine and beer; outdoor - beer is strongly preferred.	18-35 years old	Italy, Tuscany	Qualitative (Exploratory); Multiple Factor Analysis (Sample size: 430)	Marinelli et al (2014)
		4.2. Young consumers would like wine to be present also in other, less formal, contexts, as: music concert; sport event; "theme nights" (movies, games, or other activity with friends); while hiking/camping; meals outdoor (BBQ, picnic)	21-34 years old	USA	Mixed; Descriptive Analysis; Online survey research (Sample size: 467)	Thach (2011)
		4.3. 5% of consumers suggested "Easier more portable packaging" when asked how could wine become more "hip/ cool" for younger generation	21-27 years old	USA, Northern California	Quantitative (Exploratory); Interviews (Sample size: 108)	Thach and Olsen (2006)
		4.4. 3% of consumers suggested "Better packaging" as solution to increasing wine consumption for younger generation	21-27 years old	USA, Northern California	Quantitative (Exploratory); Interviews (Sample size: 108)	Thach and Olsen (2006)

The user considered for the present analyse is young consumer of alcoholic beverage, between 18-35 years old⁴, without previous knowledge or particular interest/ involvement in wine, as for this the lack in usability of wine is most evident. Millennials, as this age segment is referred to, aspect that all their experiences as consumers to be enjoyable (Fromm et al., 2011) and, in regards to wine, they drink “more for pleasure than to appreciate differences between styles and regions” (Lockshin and Corsi, 2012). From the young consumers perspective, the motivations of consume relate to having fun with friends and relaxation (Table 3, 2.1.-2.3.) and not towards wine appreciation *per se*.

To complete the profile, the goal of the user chosen for this study is to drink wine or an alcoholic beverage with friends while enjoying oneself (*having fun*). The user consumes alcohol beverages, in every-day situations and occasionally in casual meetings with friends or family, at home or out (indoor or outdoor). The user needs to reasonably choose and purchase wine in a fast and convenient manner and to enjoy consuming it in the specified context and locations.

Studies show that the consumers in this cohort (*Millennials* or *Generation Y*) tend to dismiss traditional promotion techniques, being interested in products with a clear, direct, and honest message, and adapted to their needs. They appreciate authenticity in a product, in the sense of being “straightforward, simple and does what it says it’s going to do” (Holter, 2009), as well as fast and reliable service (Thach, 2011).

Usability evaluation can be used to understand the experience of the consumer in regards to wine and to identify the usability problems that occur, in order to improve the product performance and attractiveness. First, *Cognitive Walkthrough* can be used to understand how easy is for a new or infrequent consumer to understand the product, by projecting the steps of the targeted consumer from considering to choosing and to buying wine, and evaluate the process from the user perspective.

Wine usability can be analysed in comparison with other alcoholic beverages for a new or infrequent consumer, from the perspective of:

- ease of *Understanding*, without previous knowledge

- *Learnability* and *Memorability*
- *Efficiency* – how much time will the consumer need to buy a drink
- How *Attractive* and *Engaging* is the product for the consumer.

In this regard, previous studies indicate lack of usability of wine, from the perspective of intuitiveness and understanding, as the consumers state that they don’t understand the product or that the product is confusing for them (Table 3, 1.1.-1.5.). This could generate negative emotions to consumers, *Decision Paralysis* or have a negative impact on efficiency, as much more time is needed to complete the task-choosing and buying a drink.

These segment of consumers, confused or intimidated by wine, could be attracted if wine were presented to them in a more direct and uncomplicated manner (following the principles of UCD), with emphasis on food pairing and with cues towards *having fun with friends*, hence adapting the information to their needs.

This could improve the *Understandability*, *Effectiveness*, and *Attractiveness (Engaging)* of wine, attributes of wine usability.

The way that the product is communicated should be intuitive, engaging and memorable for the targeted consumers, and this can be accomplish only by evaluating the experience of the consumers and improvements of the product. The description of the product should consider the level of knowledge and the vocabulary of the consumer and the content relevant from his perspective.

Furthermore, the way that the consumers use the product should be evaluated, taking into consideration easy handling (for transport), storing and cooling, open and consuming the product. Targeted users should be observed in the contexts where they use the product and identifying difficulties in usage (usability problems) and unanticipated patterns of usage that can be solved by redesigning the product’s package. Furthermore, by adapting the *Claims analysis* method and using it along with Focus group, the packaging of the product can be improved to fit the user needs in order to increase the usability of the product.

Young consumers are spending their time going out with friends, but are less interested in formal location; they prefer more casual contexts and focus on having fun. The typical consume

⁴For certain countries, the age considered is adjusted in conformity with the legal drinking age.

context for alcoholic beverage will be a club, a bar or a less formal restaurants, but outdoor contexts are also taken into consideration.

For improving the usability, the different contexts of use should be taken into account. The need of taking the wine *outdoor* should be considered (e.g. sport event, barbeque, picnic, hiking, party at the pool) and the packaging of the product should be adapted to the lifestyle particularities and needs identified by users, as shown in 4.2.-4.4. (Table 3). The lack of adaptability of the wine to the context of use defer users from this beverage to other, more easy to use in the context, as shown in 4.1 (Table 3).

The utility of usability in improving the relation of the inexperienced consumer with wine

This paper uses data from previous studies to address the difficulties identified by young consumers in their interactions with wine, and propose the application of usability principles in wine marketing, in order to increase the adaptation of the product to their needs.

The present usability analysis starts from the segment of users whose needs are not met by the specified product (wine). The barrier identified, between the user and the product, are based on statements of real users, from quantitative and quantitative studies shown in Table 3, and they are:

1. Complexity of product, to a degree that becomes intimidating for the user; for this reason some consumers prefer not to use / consume wine, other say they don't enjoy buying it;
2. Lack of appeal of the wine for young generation, due to their perception of wine, as "too elite" and "not cool", in contrast to their motivation of relaxation and having fun;
3. Lack of appeal of the wine for young generation, due to their perception of wine, often associated (only) with formal occasions and with older people and not meeting their needs of having fun (in company of their friends);
4. Lack of adaptability of packaging to their lifestyle - better, more portable packaging, suitable for their *on the go* active lives;
5. Lack of adaptability of packaging to their lifestyle - smaller formats, suitable for one person.

For the average consumer, information about wine is difficult to understand from different perspectives: the wine terminology is not understood, the complex Protected Designation of Origin (PDO) system unfamiliar, the description of the wine is too abstract for them. All this make the information on the label of the product irrelevant for the user.

In order to make wine more accessible to these consumers, we recommend focusing on improving wine usability, starting with the label and with the information available at the place of sale as follows:

1. Wine description should be less abstract, and the terms adapted to the users' needs and understanding; the graphic design should help prioritising the information and communicate in a clear, friendly and direct manner.
2. Use of visual information in correlation with text information to help the user to understand more quickly and to remember (and learn); the graphics should be used as tool for explaining the concept, not as artistic expressions, as follows:
 - 1.1 Use of visual information for presenting the term PDO (abstract for the average consumer) in a familiar context, as real place on a map; information regarding localization is better understood and memorized when represented visually (Ware, 2004), but just the artistic representation of a *chateau* on the label does not help in this regard.
 - 1.2 Using simplified mapping of the taste and body of the wine, on 2 axes, for representing the wine style, as concepts represented with both visual and verbal information are easily and better understood and learned (Ware, 2004).
3. Use of dimension of the visual information in order to address the hierarchy of the user needs.

The problem of the complexity of the product, identified by the users, can be addressed by applying the principles of usability to the way the product is communicated - visual presentation and description of the product.

Taking into account that choosing wine is considered an overwhelming task for many users, the inability of the user to make the decision of buying reasonably fast, in correlation with a low interest for wine, will

lead to a great risk to lose it as a customer, for the more easy-to-choose alternatives (beer, premix drinks). Therefore, the most important usability aspects that should be improved are *Understandability* and *Efficiency*, all related to the difficulty of choosing.

Presenting the choices in a way that is clear and understandable to the user will improve *Effectiveness* of the information (about wine), improve *Understandability* of the product, consequently improving usability.

CONCLUSIONS

Today's wine marketers should consider also the segment of customers (users) that do not have previous knowledge and/ or a particular interest for wine *per se*, and tend to be more intimidated than attracted by wine, due to the way that wine is presented.

As recent studies show, a segment of consumers avoid wine because they don't understand it, considers it too complex or are intimidated by it.

These users are in need of a more easy to understand product, less demanding and more engaging.

To address the needs of these users, the product and the whole wine experience around it should be redesigned. The principles of usability applied in wine marketing would improve the understanding and ease of use of the product, making it more appealing for that part of consumers that otherwise would turn to some other types of alcoholic beverages-

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