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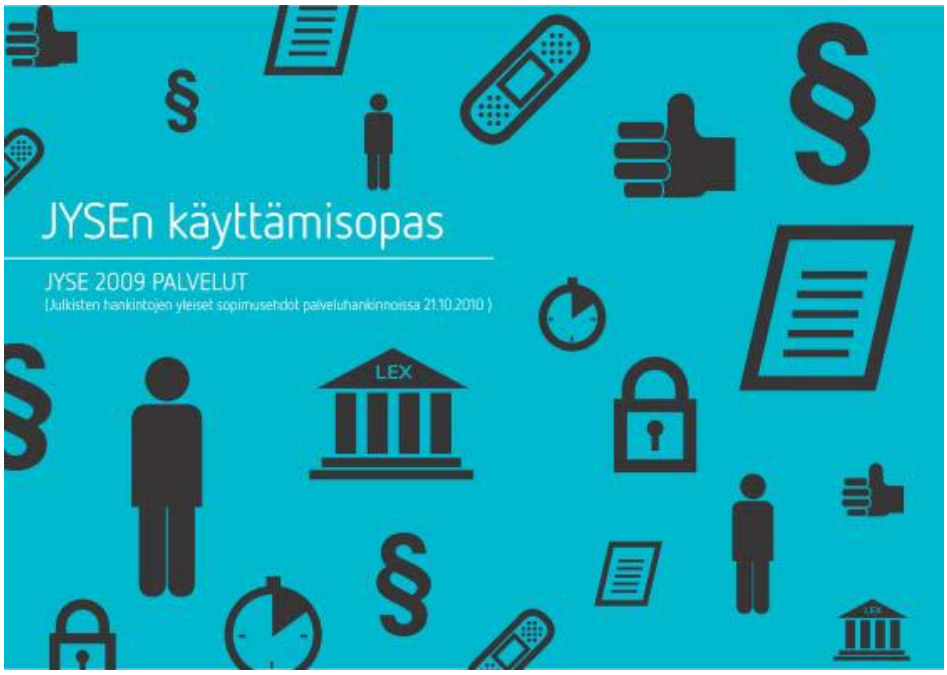
JYSEn käyttämisopas: designing and testing a user-friendly, visual guide for public procurement

During the PRO2ACT project we cooperated with Kuntaliitto in order to produce a visual, user-friendly guide for the JYSE 2009 PALVELUT terms for public procurement. The goal of the guide was to clarify the logic of the JYSE 2009 PALVELUT terms, and display such information in an appealing, easy-to-consult manner. Previous research conducted in PRO2ACT has shown that civil servants without a legal background might have difficulty in utilizing the JYSE document, both during contract-making and during implementation. In the first situation, this results in creating contracts that are not best suited for the typology of purchased service, while in the second situation it results in problems of change management and collaboration with the supplier. The JYSEn käyttämisopas aims at supporting civil servants in their decision-making processes, providing a clear picture of the parties' responsibilities, and what are the most desirable courses of action to take in different scenarios.

The JYSEn käyttämisopas has been released freely under CreativeCommons, and you can download it from down here:



In VISO we continued the work started in PRO2ACT, carrying out user tests with civil servants and public procurers, with the goal to compare the new guide to the original JYSE in terms of usability and user experience.

Description of the experiment

This experiment follows the same protocol as described in our previous study (Passera, Pohjonen, Koskelainen & Anttila 2013). It consists of two means of data gathering: a self-administered questionnaire including comprehension tasks, and focus group discussions.

The self-administered test consisted of six parts:

1. General introductory questions
2. Assessment of the test participant's predominant cognitive style (verbalizer, object-visualizer, spatial-visualizer), utilizing the validated OSIVQ scale (Blazhenkova & Kozhevnikov, M, 2009)
3. First set of 5 comprehension tasks (Set A)
4. Second set of 5 comprehension tasks (Set B)
5. Evaluation of the original JYSE 2009 PALVELUT versus the JYSEn käyttämisopas in terms of user experience, utilizing the validated scales I-PANAS-SF (Thompson, 2007) and HED/UT (Spangenberg et al., 1997), and in terms of perceived usability, utilizing the validated scale SUS (Brooke, 1996)
6. Personal evaluation of different design elements of the JYSEn käyttämisopas

Each participant would be randomly assigned to complete first to the Set A of comprehension tasks or Set B. Each participant would also be randomly assigned to complete their given sets of tasks utilizing first the original JYSE or the JYSEn käyttämisopas. This was done in order to neutralize the possible differences in difficulty in the tasks sets and the so-called "learning effect" (the second time a subject completes a similar set of tasks should, in theory, be easier, because the tasks are not something new anymore). With these precautions, we are able to observe differences in the results of the test and attribute them to the specific document used (either the original JYSE or the JYSEn käyttämisopas) and its ability to support the users in their tasks.

After the self-administered test, a group discussion was held, so that the participants could better describe their impressions and experience of using the JYSEn käyttämisopas.

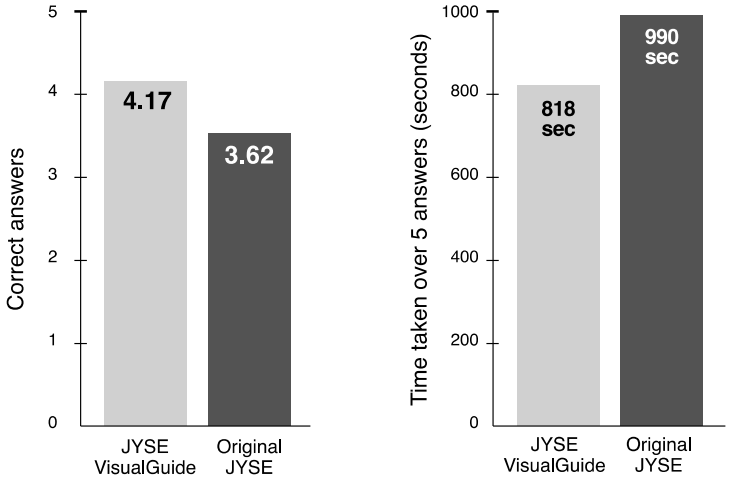
The test participants were either employed in a municipality, or in other organizations following rules of public procurement (e.g. universities, hospital districts). A total of 72 responses were utilizable in the data analysis. All test participants can be considered informed users, as they routinely utilize JYSE 2009 PALVELUT in their work and they have been working, in average, 6,9 years in public procurement. Their self-reported level of knowledge of JYSE 2009 PALVELUT was, in average, 5.26 on a 9-point scale where 1 means "very poor knowledge" and 9 means "excellent knowledge".

Results

The main measure to assess the effectiveness of the JYSEn käyttämisopas was respondent performance, which we measured in terms of number of correct answers to comprehension tasks and speed of task completion.

Comprehension performance

In average, the participants answered correctly to 4.17 questions on 5 using the Visual Guide, and 3.62 questions on 5 using the original JYSE. The average speed to complete 5 comprehension tasks was 818 seconds with the JYSEn käyttämisopas, and 990 seconds with the original JYSE. For both measures, the difference in scores is statistically significant, showing that the JYSEn käyttämisopas consistently supports faster and more accurate comprehension, even though it was the first time that the participants used the Guide!



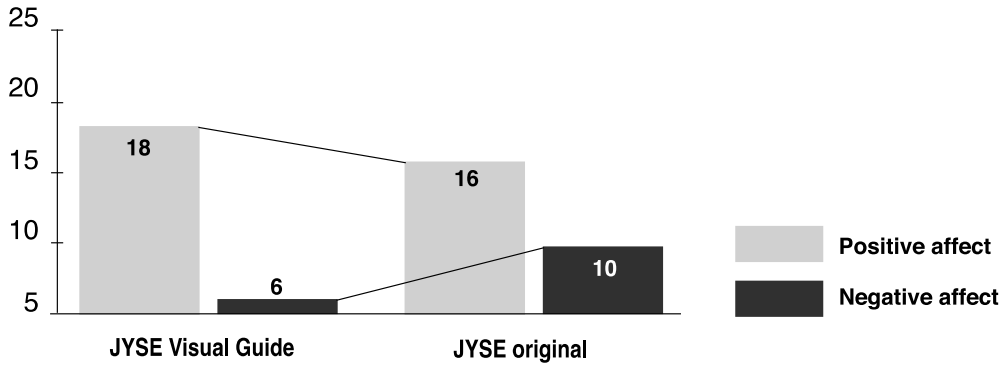
Perceived usability

In regards to perceived usability (how usable and learnable something feels), the JYSEn käyttämisopas scored 71.7 on the SUS scale, which is utilized to measure how usable a system is. In such scale, a score of 68 is considered average (Sauro, 2011), so the usability of the JYSEn käyttämisopas results slightly above average: equivalent to a B-grade if we were using a letter-grade system (from A+, highest, to F, lowest) (Sauro, 2011) or a "Good" if we were using an adjective rating system (Best Imaginable, Excellent, Good, OK, Poor, Awful, Worst Imaginable) (Bangor et al, 2009).

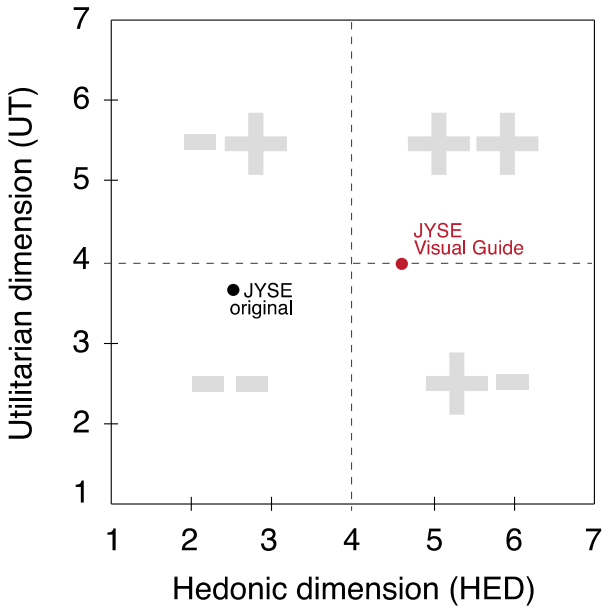
User experience

In regards to user experience (a person's behaviors, attitudes, and emotions about using a particular product, system or service), we took into consideration different measures.

The first measure, I-PANAS-SF (Thompson, 2007), measures the positive and negative affect elicited by an experience. Positive and negative affect are measured separately, because they are not the extremes of the same scale, but represent different types of emotions that can coexist during an experience. The scale ranges from 5 (lowest) to 25 (highest). As we can see in the picture below, in comparison to the original JYSE (16 positive affect; 10 negative affect), the JYSEn käyttämisopas elicited more positive affect (18) and less negative affect (6).



The second measure of user experience, the HED/UT scale (Spangenberg et al., 1997), measures attitude towards the usage experience along two dimensions: the Utilitarian Dimension (how functional and useful the document felt) and the Hedonic Dimension (how pleasurable and engaging the document felt). Also in this case the JYSEn käyttämisopas exceeded the original JYSE. Both utilitarian and hedonic dimensions scales values range between 1 and 7, with a threshold between high and low scores at 4: the most desirable scores ("pleasant & useful") are found in the top-right quadrant of the HED/UT matrix (see below), and the most undesirable results in the bottom-left quadrant ("unpleasant & useless").



Verbalizers and visualizers alike work better with JYSEn käyttämisopas

Another interesting thing to notice is that, despite all participants initially claimed to be "very bad with images" or "not a visual person at all", the OSIVQ test revealed that only 26 persons on 72 displayed a clearly predominant verbal cognitive style.

Additionally, we gave a surprising answer the question "Do visualizers perform better with a visual document? Do verbalizers perform better with a textual document?". The answer is no: both groups perform better with the visual JYSEn käyttämisopas. We analyzed statistically whether there would be any interaction between cognitive style and performance with both JYSE versions, and performance is not predicted by cognitive style. This points out two interesting things:

1. Good design and good language matter in presenting information – they are not an optional. Not even natural verbalizers can wrap their heads around legalese and dense pages of text!
2. People tend to have, by nurture rather than by nature, a low confidence in their visual skills. Our education stresses literacy and numeracy (verbal and numerical skills), and relegates visual literacy and skills to the domains of arts and design. In our society a "non-designer" is not supposed to be able to deal with images… but that is extremely troubling, because we are visual animals (vision is our most accurate sense) and some type of information is simply best communicate visually – Ask yourself: would you be able to assemble your new bookshelf if IKEA's instructions were all prose?

Our conclusions in a nutshell

- Rethinking rules and tools in a visual way and re-organizing the content in a way that makes sense for the final users can increase dramatically the usability and pleasantness of legal documents
- The "verbalizers" VS "visualizers" distinction is unhelpful when thinking about what makes a good document: information is simply better understood by verbalizers and visualizers alike when it is effectively, skillfully communicated. Some type of information is made clearer through visual language, as it can highlight the hidden logic and structure of the message. Refusing to design official documents well because "civil servants and lawyers are not visual people anyway" is a misguided notion.
- The design of the JYSEn käyttämisopas was very successful: it exceeded the traditional JYSE in all measures, and even in performance, even though it was the first time the participants saw it or used it.
- The users, as it emerged from the focus group, would anyway prefer a more radical approach: an official JYSE where the text is enriched and opened up with charts and diagrams, rather than an official JYSE and a separate visual guide.
- Visual communication forces people to externalize their assumptions on paper and show the logical links between bits of information. This became very evident when we co-designed the JYSEn käyttämisopas with Kuntaliito lawyers: even such experienced professionals discovered ambiguities in the text that they never spotted before when moving from prose to diagrams.
- In addition to redesigning rules to better present them, visualization could thus be a very powerful method in drafting and auditing new rules. Using more visual, collaborative and user-driven methods in drafting (see for example the Legal Design Jam format[link to the other blogpost of our report]) could ultimately lead to more logical, streamlined and simpler rules, presented in visually engaging ways: easier on the eye, and easier on the mind.

Read more

Passera, S., Pohjonen, S., Koskelainen, K., Anttila, S. (2013). User-friendly Contracting Tools - A Visual Guide to Facilitate Public Procurement Contracting. Proceedings of the IACCM Academic Forum 2013, Phoenix, 8 October 2013, AZ, USA.

References

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Brooke, J. (1996). SUS: A “quick and dirty” usability scale. In: Jordan, P. W., Thomas, B., Weerdmeester, B. A., McClelland (eds.) Usability Evaluation in Industry, pp. 189-194. Taylor & Francis, London, UK

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Thompson, E. R. (2007). Development and Validation of an Internationally Reliable Short-Form of the Positive and Negative Affect Schedule (PANAS). Journal of Cross-Cultural Psychology, 38(2), 227–242. doi:10.1177/0022022106297301