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Innovating Contract Practices: Merging Contract Design with Information Design

Stefania Passera

Helena Haapio
University of Vaasa

Thomas D. Barton
California Western School of Law, tdb@cwsl.edu

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by

Stefania Passera
PhD student, Aalto University School of Science
Department of Industrial Engineering and Management
P.O. Box 17700, FI-00076-AALTO,
Espoo, Finland
phone: +358 50 5625117
stefania.passera@aalto.fi

Helena Haapio, LL.M, MQ.
PhD Candidate, University of Vaasa, Vaasa, Finland
International Contract Counsel, Lexpert Ltd
Pohjoisranta 20
FI-00170 Helsinki, Finland
phone: +358 9 1355800
helena.haapio@lexpert.com

Dr. Thomas D. Barton
Louis and Hermione Brown Professor of Law
California Western School of Law
225 Cedar Street
San Diego, California, USA
phone: (619) 525-1687
tdb@cwsl.edu

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ABSTRACT:

The work and expertise of contracts professionals are vital to the operations of modern organizations and the global economy. Strategic planning as well as everyday transactions can be conceived, developed, secured, and implemented through contractual relationships. This accelerating importance and functionality of contracts is not matched, however, by their traditional format or drafting process. Indeed, their mission-critical value is not fully appreciated by decision makers. Many opportunities offered by contracts remain unexplored if contracts are seen merely as legal tools needed only in case a dispute arises. A fresh approach to contracts and contracting is called for.

Drawing on the Authors' research into *user-centered contract design, contract visualization,* and *proactive contracting,*[*] this paper explores how contract practices can be innovated. The early results of our work in progress indicate that information design, embedded into contract design, has the potential to change fundamentally the way organizations define, shape and manage their trading relationships, offering unexplored opportunities for both research and practice.

I. Introduction

The importance of working through contracts—integrating contracts into strategy, everyday actions, and a broad variety of functions—has become central to the work of virtually all modern organizations, a trend that will only intensify as supply networks broaden and globalize. Yet traditional contracting processes and documents do not offer contracts professionals the tools they need to meet unfolding commercial challenges. Within many private and public entities, contracts have been organizationally marginalized and developmentally neglected.

[*] As some of the terms used in this paper mean different things for different people, we define in the End Notes some of the key concepts we use in this paper

Such entities can be seen as operating *outside* of formal contracts, or perhaps even *against* formal contracts, but rarely *working through* contracts (cf. Sunder, 2012). As a result, instead of contributing critical competitive advantage contracts may slow down innovation and restrict efficiency, blocking organizations from reaching their full potential. Far from providing a reliable foundation for collaboration, they present a source of unnecessary friction that can actually spawn disputes instead of stimulating innovation and stronger business relationships.

Rather than understanding contracting broadly as a facilitator and coordinator of communications and activities within and beyond an organization, too much emphasis remains on the limited function of contracts as a source of information to resolve disputes. Yet even that limited role is often not well executed. In private and public organizations large and small, many hours are spent drafting and negotiating contracts, defining rights and responsibilities, and dealing with what can go wrong. Problems sometimes still arise, and when that happens, even more hours are spent arguing about what the contract says. With no resolution from the documents or conversations surrounding them, contending parties may turn to the courts for definitive rulings—a slow and expensive process.

In sum, the functional potential of contracts is not being fully met, often simply because of communication shortcomings. This Essay seeks a breakthrough that would reform contracting practices and documents, and thus enable organizations to capture stronger communication, planning, operational implementation, and personal relationships. We begin by identifying some of the obstacles that currently block realizing that potential, and in the main body of the Essay offer innovative tools of contract and information design to realize the full value and opportunities that contracts offer.

II. Fundamentals: Contracting Practices and Documents

In every procurement relationship, a contract (or a layer of contracts) is present in the form of a strategic partnering agreement, a framework or umbrella agreement, or a contract for the delivery of goods or services. These layered contracts may be written or unwritten, complex or simple, based on purchase order forms or electronic call-off orders. They may govern alliances among organizations in many countries. Regardless of format, contracts specify roles and responsibilities; construct communication structures; provide for change management and

contingency planning; and nominate dispute resolution methods in the event of trouble. In addition to legal and technical terms, contracts contain financial terms and project-related timelines and procedures.

The backbone of a contract is hardly ever made from scratch but instead is compiled using forms, templates, and clause libraries. While contracts are typically designed by lawyers, vital deal-specific information is provided by other professionals, mostly business managers and engineers (Argyres & Mayer, 2007). Experts from many other domains may also contribute, from financial to technical specialists.

However broad and commendable this participation, the formal contract that is compiled too often fails to be integrated into everyday business operations. That failure leaves behind much of the functional potential of contracting that can help organizations innovate and grow. In part this lack of integration may stem from entrusting too much of the document drafting to lawyers. Contracts seem to be written *by* lawyers *for* lawyers (Haapio, Berger-Walliser, Walliser & Rekola, 2012). The drafters of contracts seldom view themselves as designers or define their work in terms of communication. Instead, lawyers as contract drafters dream of a legal perfection that protects their client in a dispute: binding, enforceable, unambiguous, and providing solutions for all imaginable contingencies (Pohjonen & Visuri, 2008).

Contract drafters too often seem focused exclusively on the contract itself rather than on facilitating successful relationships. This produces contracts that are unnecessarily complex and difficult to use. Cumbersome, jargon-laden contracts can alienate the very executives and domain experts whose contributions would be crucial to the success of those particular contracts (Malhotra, 2012), and the broader contracting process. Experienced contracts professionals know the importance of management involvement, yet lack the appropriate tools or training to engage management more strongly. As a result, the mission-critical value of contracts is not always fully appreciated by top decision makers, the contracting process is neglected and organizationally marginalized, and contracts remain underachievers.

So what is to be done? After looking into some background studies, this paper proposes merging contract design with information design as the way forward toward innovating contract practices. We start by building the case for better

contract design that addresses users' real needs. We then introduce information design and visualization as solutions to the current challenges. The paper concludes by proposing future research directions.

III. Background Studies and a New Approach

For today's dynamic relationships to succeed, organizations need strong communication capabilities. They must be able to capture, elaborate, structure, access, and share information about their exchange relationships. Beyond that, people must be able to plan where they are going, implement those plans effectively, and imagine and grasp new opportunities.

Better contracts should be able to supply all of those needs, but stronger tools are needed. Contracts can function as helpful *planning mechanisms* (Macneil & Gudel, 2001); as *blueprints for performance* (e.g., DiMatteo, Siedel & Haapio, 2012); and as *sources for new ideas and innovation* (e.g., DiMatteo, 2010; Siedel & Haapio, 2011). Further, prior research in organizational studies as well as by decision theorists and economists has discussed contracts as instruments of *control* and *coordination* (Malhotra & Lumineau, 2011).

Achieving this broader potential for contracting leads in a direction where not many researchers or practitioners have looked before, and where few organizations have invested or innovated: ***in the human side of contracting and the important role of contract users with non-legal backgrounds.*** While user-centeredness and simplification have influenced many fields, they have hardly caught the attention of the legal or contracting community. The proponents of plain language (Kimble, 2006, 2012), simplification (Waller, 2011a, 2011b; Macaulay, 2003), minimalism (Hetrick, 2008) and lean contracting (Weatherley, 2005; Siedel & Haapio, 2010, 2011) have suggested major changes along the way, but not much seems to have happened. Instead, the increase in length of documents "appears to be blindly accepted as a necessary improvement over the quaint, brief ... documents of simpler times." (Hetrick, 2008).

We approach the challenges at a broader and more strategic level. We look at the creation, coordination, and implementation processes of contracts and at how to display contractual content that satisfies the information needs of the intended recipients. Our approach is technology-independent and simple: we seek to

develop and test ways of communicating contracts in a human-centered, simple, and engaging manner, so as to help organizations reach their goals and prevent problems.

Our approach is anchored in ***information design principles***. It could also be valuably framed by ***boundary object theory*** (Star & Griesemer, 1989). Contracts—understood as processes of interest identification, communication, and ultimately as documentary artifacts of consensus—serve as "boundary objects" that reconcile the diverse social worlds of many groups involved in commerce. Especially when commerce is international or involves technologically complex objects, the efforts of managers, engineers and designers, fabricators, procurement and sales personnel, lawyers, and even regulators must be coordinated. Although contracts are "marginal" to each particular group—i.e., understood somewhat differently by each group depending on their varying professional identity—well designed contracts can help them to "translate, negotiate, debate, triangulate and simplify in order to work together." (Star & Griesemer, 1989).

Contracts *should* be a classic example of how the "integrity of the interests of the … audiences" is maintained "in order to retain them as allies." (Star & Griesemer, 1989). Yet the current institutional neglect of contracts suggests a failure in using the boundary object "in such a way as to increase the centrality and importance of [each group's] work". The translation work of contracts across boundaries is compromised by lawyers adopting language and information formatting that *fight rather than advance* mutual understanding across groups. The results: underuse of contracts; transactional inefficiency; and lost opportunities for innovation. This is the challenge to which our approach responds.

IV. Stating the Challenge: Users Need (and Deserve) Better Contract Design

Today's organizations develop new solutions, business models, and revenue streams at a growing speed. As they outsource, network, and collaborate, they become more dependent on one another—and on contracts. Yet each key function of contract design—creation, coordination, and implementation—currently comes up short.

Contracts frequently focus on minimizing the consequences of failure rather than

maximizing the drivers of success (IACCM, 2011). They are structured in a peculiar way and use language that non-experts often find overly complicated and hard to understand. Contract drafters—lawyers and non-lawyers alike—strive to make their contracts look "professional" or even "legal," thus compromising their translational dimension as boundary objects. Drafters tend to copy-paste clauses and prefer "tested language" in widely used clauses. This language is presumed to have a clearly established and "settled" meaning. But the result is often a writing style that is "(1) wordy, (2) unclear, (3) pompous, and (4) dull." (Mellinkoff, 1963, p. 23). It can even be unwittingly contentious: Language is "tested" and meanings "settled" because they have been the subject of litigation. Which raises the question: why rely on language that resulted in litigation? While such language may help to win a battle in court, it does not help those who want to avoid such conflict in the first place. Many contracts seem optimized for court—which likely represents a failure of the project and business relationship rather than their success.

Coordinating contract implementation is certainly made no easier by the difficult language and structure of contracts. In complex project contracting, the people forming the team may come from many different countries and cultural backgrounds. Even though they may speak the same language, they may use different professional dialects. Major contract risks are caused by the gaps when information and responsibility are transferred from one team to the other (Haapio & Siedel, 2013, pp. 44–46, 147–149). Once the contract is made, for example, project managers and operative teams take over. They "inherit" contracts from negotiators who likely have moved on to the next deal, with little or no guidance to help understand what needs to be done by whom, when, and why. Misunderstandings easily occur and disrupt collaboration. In order for procurement professionals and contract designers to capture all necessary business, financial, and technical requirements and for contracts to transmit information to the implementation team, cross-professional communication must succeed.

The goal of a drafting lawyer may be to create the perfect contract, but lawyers' clients require a different approach. The goal is not the *making* of the contract, but its successful implementation. Signing a contract is just the beginning of the process of creating value together with business partners (Ertel, 2004, p. 62). Contracts do not make things happen—people do. People in project delivery teams need to know what work needs to be carried out, when, where and how; people with financial responsibility need to know how much is due to whom and when.

Crucially, contract design must change, and contract planning and crafting must become both stronger and more flexible. They must promote broader participation in contract creation; they must facilitate more frequent and transparent coordination within and between the contracting parties; and they must generate the kind of ideas and energy that spawn innovation. This, we believe, paves the way for next-generation contract design.

Innovative contract design should begin, but not end, with plain language. A number of studies confirm the preferred status of plain language among many groups of readers—clients (Adler, 1991), judges (Kimble, 2006, 2012) and the public (Plain Language Institute of British Columbia, 1993). Conversely, there is little scientific evidence to support legalese. Common arguments focus on the difficulties of adopting plain language (Tiersma, 2006), rather than explaining why legalese is superior from a cognitive, communicational, or even "practical" (i.e. efficiency/effectiveness) perspective. Rather than a substantiated choice legalese appears to be a professional convention, grounded in tradition and sustained by the difficulty of achieving change.

While we support the use of plain language, we do not believe that it will suffice in making contracts easy to use in everyday practice. Nor do we believe that lawyers alone—even if they wanted to—will be able to make the necessary changes happen. Too much of contract content reflects strategic and business decisions. Successful boundary objects must satisfy the needs of each disparate social world. "Contract simplification cannot proceed without client agreement on basic business positions" (Morrison, 2010). This is where information design and visualization enter the picture.

V. Responding to the Challenge: Information Design and Visualization

Information design has been defined as "the defining, planning, and shaping of the contents of a message and the environments in which it is presented, with the intention to satisfy the information needs of the intended recipients" (Information Design Exchange, 2007). The rationale behind information design is deeply user-centric: it is "an area concerned with understanding reader and user responses to written and visually presented information" (Beardslee, n.d.). Since the ultimate goals are clear communication and enabling users to interact valuably with

information, information design does not privilege one mode of communication, but strategically utilizes what better suits the particular information at hand, the particular user group, and the particular context.

Visualization, good typography, and layout design are core parts of information design. Plain, undifferentiated text alone cannot provide salience or prominence to a piece of information. For easier reading, stronger attention must be given to what is more relevant to the user (Albers, 2007). Salience matters because humans have limited cognitive resources, which are easily depleted in complex cognitive tasks. When a person gains knowledge of one aspect of a situation, it often comes at the cost of not gaining information about another aspect (Endsley, 1995; Wickens & Hollands, 2000). Visual cues can provide an attention hierarchy, making sure that the most important points are not lost.

Visualization offers more than improved functionality and performance. Borrowing terms from industrial design and human-computer interaction, it is not only a matter of *usability*, "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use" (ISO 9241-11, 1998), but also of *user experience*, "[e]very aspect of the user's interaction with a product, service or company that make up the user's perceptions of the whole" (Nuutinen, Seppänen, Mäkinen, & Keinonen, 2011). Visualization has both a functional and an experiential role, and both are needed if we wish to facilitate mutual understanding and engage non-legal audiences more effectively.

When the cognitive barriers have been overcome, contracts and contracting can offer unexplored opportunities for both research and practice. Information design approaches and visualization can be used in invitations to tenders, purchase orders, specifications, service level agreements, contract templates and related guidance as additions to traditional text, aiming at:

1) Clarifying what written language does not manage to fully explain. When readers interact with visual content, their information processing is more efficient and effective, leading to greater speed and fewer errors (Kirsh, 2010). This is because different presentation codes—verbal and visual, in this case—distribute the cognitive load on different information processing systems, preventing information overload (Keller & Grimm, 2005).

2) Making the logic and structure of the documents more visible. This is achieved through “access structures”, which are typographic features of texts such as lists, headings of various types, summaries, indexes and diagrams revealing the structure of the document (Waller, 1979).

3) Giving both overview and insight into complex terms and processes. Visual elements assist readers in focusing on important items and processing the text selectively when necessary (Duchastel, 1982).

4) Supporting evidence, analysis, explanation, and reasoning in complex settings. Visualizations support analytical thinking and the generation of new insights, because they make patterns explicit and accessible to users (Chabris & Kosslyn, 2005).

5) Providing an alternative access structure to the contents, especially to the non-experts working with the document. When the role of decision-maker is separated from the role of subject matter experts, we have a problem of knowledge asymmetry that can be resolved only through good communication (Eppler, 2004). Visualization helps in aligning different mental models, because it reifies internal thoughts into shareable, externalized objects for thought (Kirsh, 2010).

6) Helping the parties articulate tacit assumptions and clarify and align expectations. According to Kirsh (2010), visualization allows for an explicit encoding of information that makes concepts easier to understand.

7) Engaging stakeholder who have been alienated by the conventional look and feel of contracts. User engagement is seen as crucial by different authors, because the readers’ affective response to a document ultimately affects the motivation to read and the attention paid to it (Gribbons, 1991; Carliner, 2000).

The wider goal behind the application of visualization and information design in contracts is to enhance communication. Contract documents can be transformed into user-centric boundary objects that facilitate collaboration and communication across functions, departments and organizations. When the existing cognitive and motivational barriers have been overcome, contracts and contracting can offer unexplored opportunities for both research and practice.

A. Beyond Text: Examples

Although the visualization of contractual information is not yet a mainstream practice, it is already possible to identify some promising examples. Visual language can be utilized to explain a variety of concepts, with different goals, both in contracts and in supporting and explanatory materials about the contracts.

In a case study conducted at University of Oslo, a group of lawyers, managers, and engineers were asked to analyze the risks related to a contract proposal using a method based on graphical language and diagrams. The case study showed that graphical language was helpful in communicating risk amongst the participants, but also suggested the need for a combination of graphical and natural language for improved decision-making. (Mahler, 2010, pp. 237–262)

Visualization has been also successfully used in clarifying Incoterms, the international standard trade terms such as FOB, CIF, and DDP. The costs, risks and tasks associated with each term can be explained through a hybrid diagram, which utilizes intuitive icons and bar charts (Figure 1 illustrates "Free Alongside Ship" or FAS). Cost and risk allocation can thus be communicated in split seconds. A quick image search on the Internet reveals the popularity of this visual explanation. It is not only utilized in the official version of the Incoterms published by the International Chamber of Commerce (2010), but most logistics and transportation companies have created their own diagrams to better communicate with clients and partners.

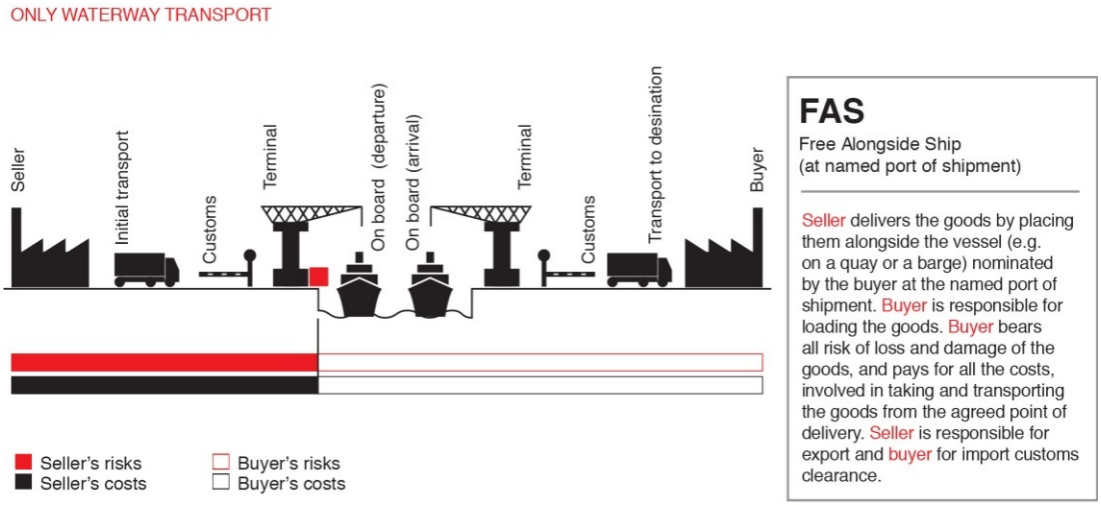

Figure 1. Example of an Incoterm diagram, accompanied by a plain language summary of the illustrated term. (© 2012. Aalto University. Used with permission.)

The Scottish Government has visualized their public procurement and contracting process in what they call the Procurement Journey: online guidance intended to support all levels of procurement activities and to help manage the expectations of stakeholders, customers and suppliers alike (The Scottish Government, 2012b). More recently, an accompanying Supplier Journey has been launched, seeking to explain the process of awarding a public sector contract in straightforward terms, by using an intuitive metro map metaphor (Figure 2). The map sets out what buyers expect suppliers to do at each stage in that process. It gives practical information on how suppliers can find out about business opportunities; how to bid for business; what to expect when delivering the contract; what support is available to help suppliers win business; and what they can do if they are unsuccessful (The Scottish Government, 2012a).

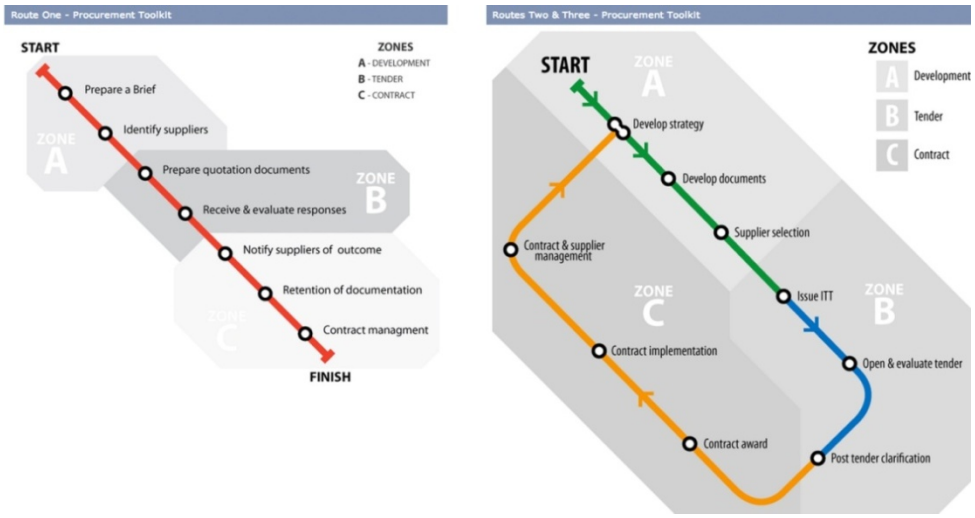

Figure 2. Metro map visualizations used to explain the different alternative processes in public procurement. Available at http://www.scotland.gov.uk/Topics/Government/Procurement/buyer-information/spdlowlevel/routeonetoolkit (Used under the terms of Open Government License: http://www.nationalarchives.gov.uk/doc/open-government-licence/)

Flowcharts are useful tools for clarifying complex information, not only because they offer a simple and easily recognizable method for displaying questions and answers, but also because the method is familiar to business audiences. Flowcharts open up diverse logical paths by mapping and differentiating pieces of information visually, and reduce ambiguity by univocally matching solutions to doubts. Jones and Oswald (2001; Jones, 2009) provide examples of how flowcharts can be successfully used to clarify contractual information, showing how and why elements such as the logic of contract structure, the actors involved, and clauses

such as contract duration and indemnification can be visualized. A commercially successful example, from the UK, is the NEC family of contracts (NEC, n.d.) for procuring works, services and supply, together with associated guidance notes and flowcharts which make understanding them easier.

That the flowchart approach is both flexible and replicable in other sets of terms and conditions is shown by an ongoing experiment developed by one of the Authors in collaboration with Kuntaliitto, the Association of Finnish Local and Regional Authorities (Pohjonen & Koskelainen, 2012). With the help of icons and flowcharts, this project aims to create a visual guide to the General Terms of Public Procurement in Service Contracts (Finnish Ministry of Finance, 2009). In the flowcharts, the implications of different actions are explored, showing how different decisions lead to different outcomes: the example (Figure 3) illustrates price change mechanisms. Color-coding helps differentiate outcomes in which the collaboration is maintained, possibly under new conditions (yellow), or disrupted (red).

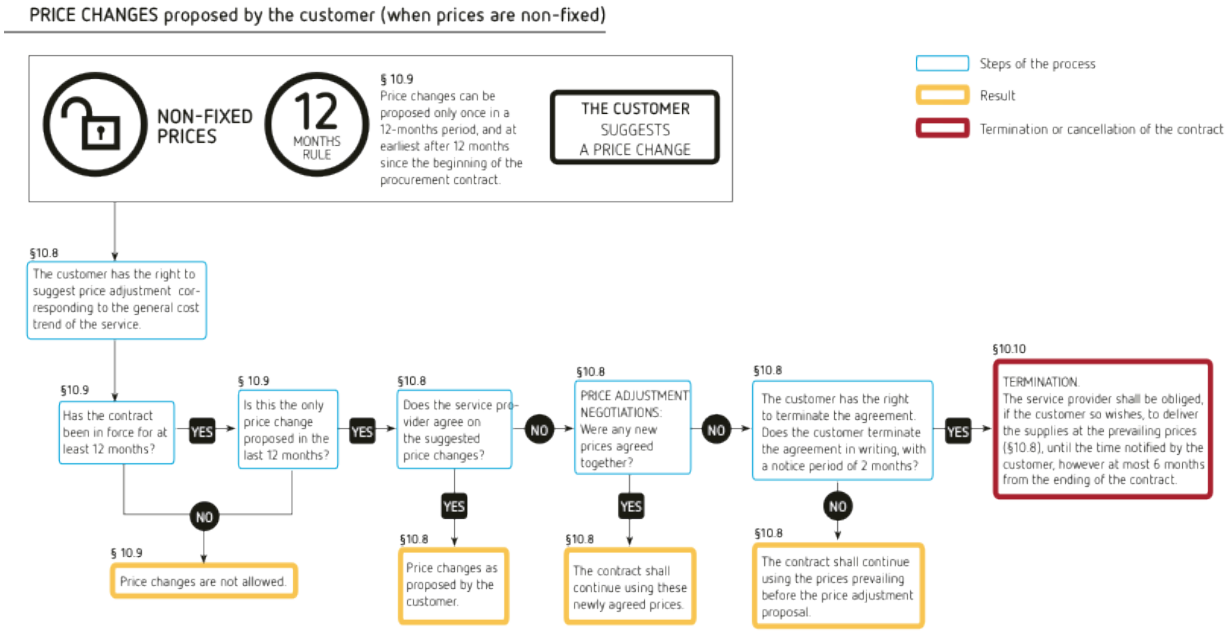

Figure 3. Flowchart visualizing the rules for proposing price changes: extract from a visual guide (draft version) to the General Terms of Public Procurement in Service Contracts (Finnish Ministry of Finance, 2009). Work in progress.

The use of visualizations in the context of B2B procurement contracts has been recently evaluated in a case study carried out by one of the Authors in a Finnish company operating in the metals and engineering sector (Passera, 2012; Passera & Haapio, 2012). Figure 4 shows an example of visualized clauses in a prototype Framework Agreement for the procurement of industrial services: the first utilizes a timeline, while the second an iconic representation. Both types of visualization provide a summary and a clarification of what was already stated in textual form, reinforcing its message and reducing ambiguity.

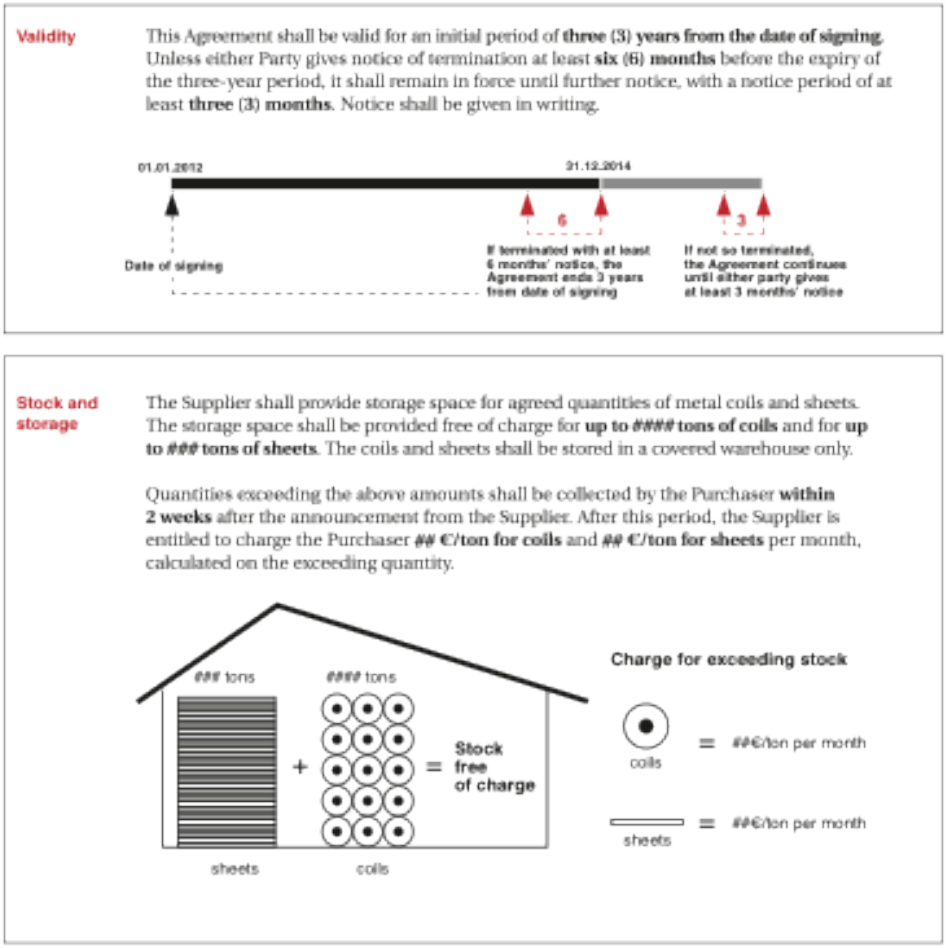

Figure 4. Examples of visualized clauses in a Framework Agreement: validity (top) and storage conditions (bottom).
(© 2012. Aalto University. Used with permission.)

Our preliminary results and discussions with participating companies support the view that information design and visualization have positive effects in knowledge-intensive organizational tasks (Bresciani, 2011; Platts & Tan, 2004). As this is an emergent field of research, we need more prototypes, user tests and research to suggest, for example, which tools work best for which users or contexts. In any case, our early results indicate that much can be gained by merging the research and practice of contract design and information design. New methods of communicating contract-related information offer great potential for simpler, user-friendlier contracting processes and documents. The test results so far (Passera, 2012; Passera & Haapio, 2012) clearly indicate positive results in terms of speed of reading and enhanced comprehension, as well as a strong user preference for a visualized contract as opposed to a text-only version.

When teaching cross-border contract law to business managers and students, one of the Authors has experimented with visualizations and visual metaphors, with the aim of curing *contract phobia*, changing attitudes, and making contracts' invisible (implied) terms visible (Haapio, 2004, 2009). These experiments further indicate that many legal problems could probably be prevented if visualizations would show the presence and impact of such terms, or the presence of "invisible expectations," as in the following example.

B. How Visualization Could Have Prevented a Legal Problem

At times, the interests of the parties to a contract negotiation are widely misaligned. One party wishes to have a long-term commitment, while the other wishes to be able to walk away from the deal with short notice. The parties' different expectations relating to the intended duration of their relationship can lead to a less than amicable end of the contract. In the following example from Canada, a termination clause was interpreted differently by the two parties. (Robertson, 2006; Austen, 2006; Adams, 2006; DiMatteo, Siedel & Haapio, 2012). It would have been best for the parties to have discovered their different views of the contract at the negotiations stage. But they did not. In this case, the lack of clarity lead to a million dollar, eighteen month dispute over the meaning of a single comma in a clause. A visualization of the termination clause could have prevented the dispute from arising.

The clause in question read as follows:

> *8.1 This agreement shall be effective from the date it is made and shall continue in force for a period of five (5) years from the date it is made, and thereafter for successive five (5) year terms, unless and until terminated by one year prior notice in writing by either party.*

As regards the initial term of the agreement, one party (Rogers) thought that it had a five-year deal. The other party (Aliant) was of the view that even within this initial term, the agreement could be terminated at any time with one year's notice. The validity of the agreement and the money at stake all came down the meaning of the final comma. Differing expectations are hard to manage or align if they are not visible. But as illustrated in Figure 5, visualizations can help make the invisible visible.

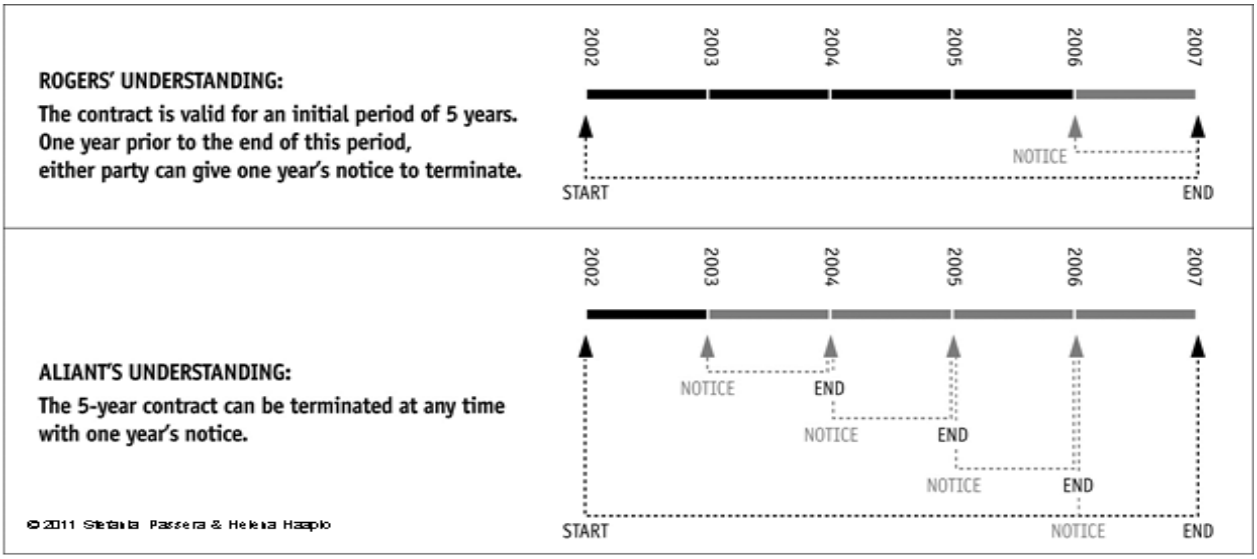

Figure 5. Two timelines showing the parties' different understandings of a contract clause

Ultimately Rogers' understanding prevailed, but not before lengthy and expensive proceedings (Telecom Decision CRTC 2006-45; Telecom Decision CRTC 2007-75). Simple timelines, as in Figure 5, would have shown the parties their different understandings. This would have allowed them, during the negotiations, to come to a mutual understanding and remove the ambiguity. In the words of Louis M. Brown, the Father of Preventive Law: "It usually costs less to avoid getting into trouble than to pay for getting out of trouble". (Brown, 1950, p. 3)

Timelines are not only useful to reveal different interpretations of the same clause, but also to characterize the practical differences among possible alternatives. As we can notice from Figure 6, validity clauses that are deeply different in content also look significantly different, thus helping in minimizing possible ambiguities. Additionally, several timelines can be used together, as a matrix, to communicate the different duration of different provisions. An example is provided in Figure 7: the delivery process of complex industrial machinery is lengthy, and different responsibilities change hands from supplier to purchaser in different moments in time. A multiple timeline can help summarize this, providing a clear summary to the key persons involved. A higher level of awareness, in return, not only prevents misunderstandings, but also provides better insights for effective risk and change management.

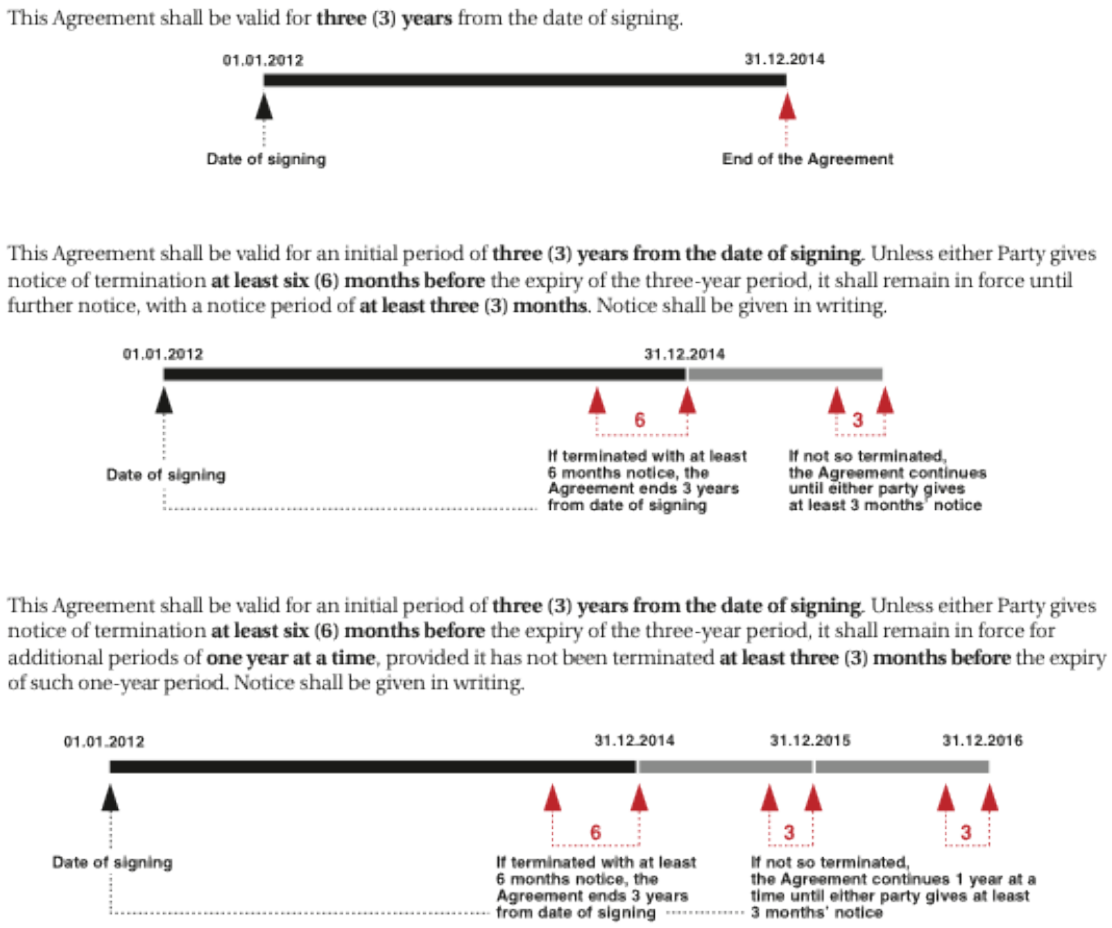

Figure 6. Timelines underlining the differences between alternative validity clauses.

Figure 7. Multiple timelines showing the transfer of ownership and the allocation of risk, costs and responsibilities between parties.
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VI. Future Research Directions

Establishing new case studies and conducting empirical evaluations are necessary steps in exploring and creating a more solid basis for this novel field of research. Interactions with real contract users generate rich qualitative data that can shed light on their knowledge, cognitive and experiential needs, as well as the constraints and challenges arising from the organizational environment and cultures. Experimenting with different types of contract in different contexts may reveal both similarities and idiosyncrasies among cases, thus determining which findings can be generalized.

Investigating contract usability and user experience is only a first step. To gauge the proper potential of merging contract design with information design and contract visualization, we should focus on the actual social interactions and boundaries between different professional communities which constitute the context in which contracts are planned, created and used. Doing so should also reveal whether redesigned contracts can have a positive influence on organizational performance by providing better tools for collaboration. Longitudinal studies could demonstrate whether negotiation times shorten, and

whether misunderstandings and disputes soften after visualized contracts are adopted.

Finally, we will inventory which skills and tools are needed for non-designers to start visualizing abstract concepts as a routine organizational practice. Companies should not have to rely on professional designers every time they make a procurement contract: we would like managers and lawyers to be able to produce visualizations autonomously, overcoming any “fear of drawing”. They should have access to better digital drawing tools. More importantly, they should learn to think and communicate differently—in visual as well as verbal terms. Our future research work will investigate what is required to provide non-designers with basic visual literacy skills and how their acquisition of such skills can be promoted.

VII. Conclusion

Contracts contain critical business information. If users remain reluctant to read what their contracts say, or if their attempts to understand their contracts are futile, then implementation will often fail. Business and legal problems will follow. Humans need information they can understand, and technology does not eliminate the need for their involvement in generating and sharing that information. Good contracts require engaged imaginations and fruitful personal communication.

Crafting a contract takes important steps toward articulating a business proposal, thinking through potential contingencies that may affect it, and achieving business objectives. This paper illustrates the potential of information design to revolutionize each of those steps. Information design — especially visualization — can help engage stakeholders, improve contract communication, and enable managers and lawyers to better understand and address business needs. Our early research results and prototypes show how contracts can be made easier to comprehend and to implement. Such contracts can tap into their full potential for fostering a good relationship, leading to innovation and supporting value creation.

This paper argues that, even when complexity is unavoidable, potential sources of confusion can be removed, and underlying themes and goals revealed, through information design methods such as visualization. Contracts wait to be reinvented to work more effectively and proactively for innovation, business success, and problem prevention.

Acknowledgments

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End Notes: Key Terms and Definitions

In this paper, we use the following terms in the following way:

User-centered contracts: contracts that are designed and drafted focusing on the knowledge needs of different user groups (with both legal and non-legal backgrounds), their cognitive capabilities, and the contexts where the contract will be used.

Information design: a way of displaying information and knowledge in a human-centered, simple and engaging manner. One of its subsets is *knowledge visualization*: a field of study and practice that investigates the power of visual formats to support the cognitive processes of generating, structuring, sharing and retrieving knowledge. *Contract visualization*, in turn, is a subset of knowledge visualization which utilizes information design methods to make contracts clearer and more user-friendly.

Proactive Law: a future-oriented approach that uses the law to promote successful outcomes and prevent problems—unlike traditional law, which is oriented to the past and mainly uses legal rules to react to past failures and resolve legal disputes.

Proactive Contracting: a field of research and practice that uses contracting processes and documents to merge *Proactive Law* with contract, project, quality and risk management in order to promote successful outcomes, prevent problems and balance risk with reward. In the corporate contracting world, the goal is to provide a reliable platform and a good roadmap for the parties to follow in their business relationship to reach their objectives, and, at the same time, to minimize the potential for problems, differences of opinion, disputes and litigation. These

goals are related; a good roadmap not only documents the basic business understanding and enhances performance but also minimizes the potential for problems.