

The adaptation of design thinking in auditing

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How can a supreme audit institution (SAI) use design thinking in auditing? SAI's audit the way taxpayers' money is collected and spent. Adding design thinking to their activities is not to be taken lightly. SAI's independently check whether public organizations have done the right things in the right way, but the organizations might not be willing to act upon a SAI's recommendations. Can you imagine the role of design in audits? In this paper we share our experiences of some design approaches in the work of one SAI: the Netherlands Court of Audit (NCA). Design thinking needs to be adapted (Dorst, 2015a) before it can be used by SAI's such as the NCA in order to reflect their independent, autonomous status. To dive deeper into design thinking, Buchanan's design framework (2015) and different ways of reasoning (Dorst, 2015b) are used to explore how design thinking can be adapted for audits.

Keywords: adaptation, Supreme Audit Institutions, design thinking, design research, co-creation

Introduction

Public organizations have to be accountable. As 'actors', they have to explain and justify their conduct to the 'forum', the forum judges (Bovens, 2007). In the end, it is about taxpayers' money. Supreme audit institutions help parliament – the 'forum' – understand how the government – the 'actor' – spends public money and how it performs. A minister, as a principal, has to be held accountable for the use of public funds.

The Netherlands Court of Audit (NCA) is a supreme audit institution. Based in the Netherlands, it checks whether the Dutch government spends public funds economically, efficiently and effectively. Its statutory task is to audit the revenue, expenditure and performance of central government and the institutions associated with it (NCA, 2016). Dutch law mandates the NCA to conduct audits using all the information it needs to check whether government did the right things in the right way. The NCA then reports to parliament and publishes its audit reports. The NCA is an independent and autonomous organization – no one can order it to audit a certain subject or to audit in a specific manner.

About 150 auditors work at the NCA; most of them are economists, chartered accountants, social scientists, data analysts or come from another academic background. Auditors 'form an opinion on a matter in an independent, expert and systematic way, based on acceptable criteria and sound evidence, within a certain institutional and accountability context', according to Dees's definition of public sector auditing (2010, p. 13, in Dutch). The audits are carried out systematically in an 'audit circle' designed by the NCA, in order to arrive at quality and impact. It comprises five compulsory phases the auditors have to follow: strategic audit proposal, audit design, collecting data, memorandum of findings and audit report.

The NCA's auditors inevitably have a preference for content-centred working environments, where people are expected to make improvements (positive change) based upon knowledge. This expectation that objective knowledge will lead to changes can be understood as a particular style of change management. André



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Schaminée (2018) identifies five different styles of change management, based on management theory developed by Hans Vermaak and Leon de Caluwé, as summarized in table 1.

Table 1: Five styles of change management (Caluwé, 1998, p. 11), selection of characteristics from Schaminée (2018, pp. 46-47)

<i>Change management style</i>	<i>Things change when you</i>	<i>Focussed on</i>
1. Negotiation (yellow)	Align interests	Positions and context
2. Empirical understanding (blue)	First think and then act systematically	Knowledge and results
3. Learning (green)	Introduce people to a learning situation	Shared meaning, setting and communication
4. Motivating (red)	Stimulate people in the right way	Procedures, inspiration, atmosphere
5. Organic (white)	Make space for spontaneous evolution	Complexity and meanings

Auditors, though, are skilled in the second style of change management – empirical understanding. The first style of change management is based on negotiation. In the context of the NCA it is used mainly by parliament. Schaminée observes that the first two styles are dominant in the public sector (pp. 45 & 48). He proposes adding ‘design thinking’ as a new style. Design thinking is a combination of the third (learning) and fifth (organic) style ‘where giving meaning is paramount’ (p. 48). Design thinking ‘refers to methods and techniques that designers use to achieve innovative solutions’ (p. 22) and covers a wide range of design approaches. That is why this term is used in this paper.

Design thinking is a new concept in auditing

‘Design thinking’ is an interesting concept as a means for supreme audit institutions such as the NCA to stay relevant in a world of information overload. For an audit to have an impact, more needs to be done than simply writing down the findings in a report. Diny van Est and Linda Meijer-Wassenaar have been working at the NCA for more than ten years. In this paper they share their most recent experiences with the use of design thinking in the NCA’s audits. Diny was audit manager of one of the two cases described in this paper and is an expert in innovative methods; Linda was involved in both cases as a design researcher.

Design thinking is a relatively new audit phenomenon. It can add value to audits and help auditors think more human-centred (Bijl, 2017), work iteratively and unravel complexity and abstract topics by making them tangible (visual, tactile) – and thus help create more impact. Yet, the first step to enable design to add value to an audit is to adapt the understanding of design (Dorst, 2015a). As Dorst explains, when adapting design principles in a new context it is important ‘to delve deeply into the practices’ (p. 23). In this paper we explore the different ways of reasoning between audit and design (Dorst, 2015b) and the design perspectives that can be used in audits (Buchanan, 2015).

One important distinction between auditing and design thinking is the way of reasoning. Most auditors start with deductive reasoning: they know the what (standards) and they compare this with the how (reality) to discover the unknown outcome (does reality comply with the standards?). When auditors want to know what patterns lead to the outcome (why doesn’t reality comply with the standards?), they use inductive reasoning: they discover unknown patterns that, together with known elements, lead to a known outcome (Dorst, 2015b, p. 46). Designers, however, discover unknown elements and unknown patterns that lead to a known outcome: design abduction (p. 49). This is what makes the combination of designing and auditing quite challenging.

To explore the use of design in auditing the NCA carried out a series of experiments. The experiments can be put into perspective using Buchanan’s framework (2015). Buchanan (pp. 13-14) differentiates between four orders of design. They are derived from the evolution of design practices, as Buchanan explains (p. 11), and are

‘an art comprised of four dialectical moments in the sequence of thought and action – moments of questioning and reflection as well as action’, (p. 15). Figure 1 shows Buchanan’s four orders.

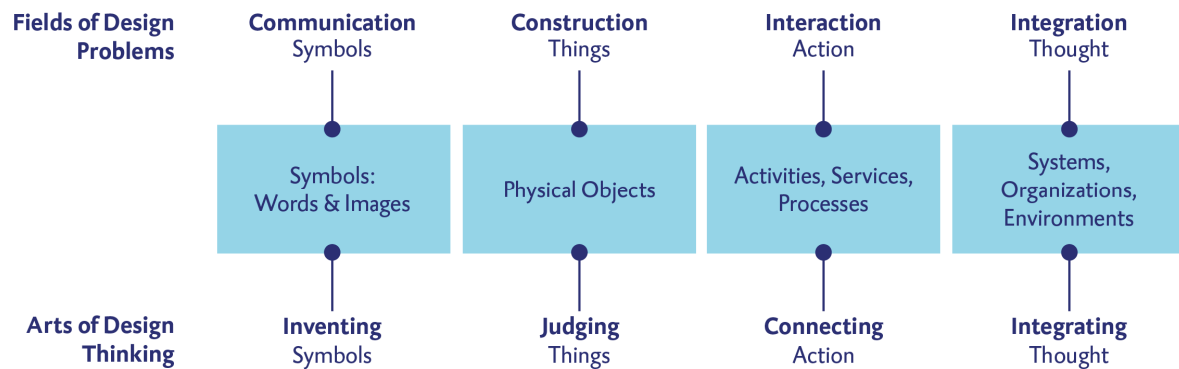


Figure 1. Based upon Buchanan’s four orders of design (2015, p. 14).

We used this framework to reflect on our audit work and applied the four orders to understand what design can do for audits. The first order, ‘symbols’, can be found in our reports in the form of words and images. The second order, ‘objects’, is the report or publication as a whole, so this exceeds the individual words and images. The third order, ‘interaction’, is concerned with how we engage with our stakeholders. The fourth and final order is ‘thought’. In this order all disciplines have to work together to improve the system. Yet various interests, values and methods stand in the way of improvement, especially in complex systems such as the examples we give in this paper.

Examples of design approaches in two audits

This paper describes two audits that we selected to explore and analyse how we applied design approaches using the different ways of reasoning identified by Dorst and Buchanan’s framework. The first example is an audit of the EU system of CE marking. The audit asked: why is it that products that do not meet EU health, safety and environmental protection standards are nonetheless sold on the EU market? And what is the government doing about the problem? The audit commenced in autumn 2015 and the audit report was published in January 2017. The second example is an audit on the provision of information in the social domain. This audit started in January 2018 and publication followed in September of the same year. In this audit the NCA wanted to provide advice on how more coherent and more structured information could strengthen the information position of the House of Representatives.

First example: CE marking

Everyone in the European Economic Area, of which the Netherlands is a member, encounters products bearing a CE marking every day – at home or at work. Electrical appliances, toys, packaging, sticking plasters, supermarket scales, roadside petrol pumps, ladders used by window cleaners and bread slicers used by bakers are all examples of products that are subject to CE marking. Dozens of products in the EU are withdrawn from the market every month because they pose a grave risk to the users’ health and safety. Curiously, many of these products carry a CE marking.

CE stands for ‘Conformité Européenne’, meaning ‘in compliance with EU law’. By affixing a CE marking in the form of a logo to a product, the manufacturer declares that it complies with all applicable EU health, safety and environmental protection requirements. This logo is compulsory in all 33 countries of the European Economic Area.



Figure 2. CE marking as a logo (European Commission, n.d.)

The CE marking system is complex and hard to audit for several reasons. Firstly, as a system of the European Economic Area it involves many stakeholders. Secondly, it is a mixed public-private system in which both private sector parties (such as manufacturers) and public sector parties (such as market surveillance authorities) have their own responsibilities and need to interact with each other. Thirdly, it is a technical issue, specific expertise is needed to judge whether or not a product complies with the standards. And finally, the implementation of the CE system in the Netherlands involves a large number of public sector actors that are involved in policymaking for the CE system and its implementation: six ministers, five national inspectorates and a number of autonomous administrative authorities. This is probably also the case in the other EEA countries.

As an audit team we were challenged to 1) determine to whom we should address our recommendations, 2) formulate helpful recommendations for parliament in a transnational, public-private system and complete our audit knowing that we were stretching our mandate (the NCA may not audit the private sector), 3) command the same expertise as our stakeholders, and 4) make government 'care' when none of the six ministries felt responsible. The team consisted of three auditors (with legal and surveillance expertise), a data analyst and the two authors of this paper: a design researcher and an audit manager.

Our first goal was to provide the Dutch House of Representatives with an understanding of how the CE system works and the principles underlying it. By sharing this knowledge we wanted to focus on the opportunities available to the Dutch parliament to perform its role as a watchdog and thus help safeguard such interests as health, safety and environmental protection. We used inductive reasoning – finding patterns – to reach our first goal. The team carried out a statistical analysis of the database used by the inspectorates of the 33 European countries to inform the European Commission about dangerous products, analysed various documents and held a wide range of interviews. We then discussed our findings with Dutch stakeholders from both the public and the private sector. And finally, we discussed the most important challenges in an international EU workshop on market surveillance.

Our second goal was to 'make people care', but we did not know how to. So we experimented without knowing in advance whether or not we would succeed. The way we worked to reach our second goal can be classified as design abduction – searching for elements (what) that would work (how) to reach our desired outcome (making people care so they want to take over our recommendations). We experimented with various infographics (first order), methodologies to make our product more engaging (second order), approaches to interact with our stakeholders (third order) and searched for ways to improve and be meaningful as an SAI in a complex system (fourth order). To illustrate these experiments we will share a few of our experiences, presented in the same sequence as Buchanan's four orders of design.

Using 'symbols' (first order)

Since 2015 the NCA has used more infographics and data visualizations in its audit reports to tell stories visually. Yet the added value of using visuals *during* audits, in terms of new and different insights, was still being discovered at the time of this audit. The involvement of a design researcher helped the team discover a diverse range of visual stories which were used in the audit report to unravel the system and to get the message across (Meijer, 2018).

One of the elements the audit team wanted to explain visually concerned the 27 product groups that had to bear a CE logo. To produce the infographic (figure 3) the design researcher worked closely with a member of the audit team with a background in the law. Based upon the legal information on the product groups, 27 pictograms were selected to help readers better understand the audit subject. The process that led to the infographic helped the team sharpen its understanding of the product groups. The team also discovered that

the information about the product groups was not as clear as initially thought. The team did not realise this until it tried to present the information visually.

Three of the 27 product groups that have to comply with CE rules do not need to bear a CE marking

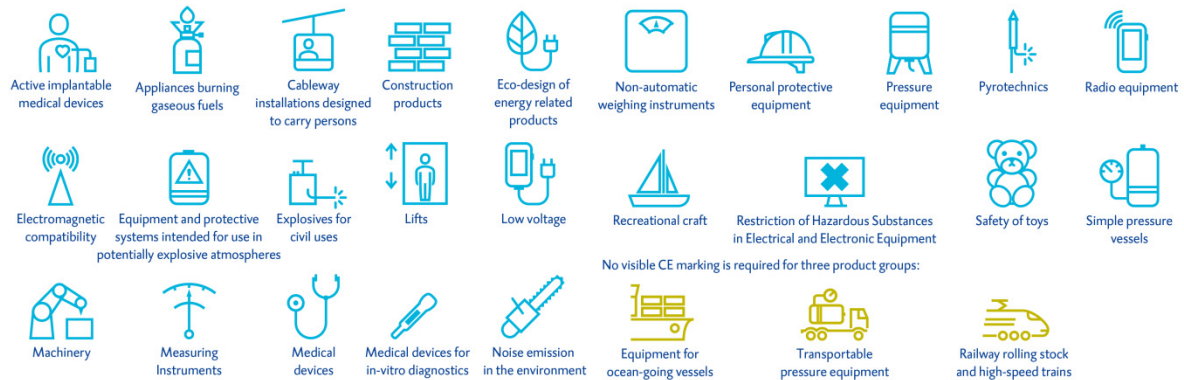


Figure 3. An infographic of 27 CE product groups (NCA, 2017)

In complex settings, such as the CE system, it is particularly important to start visualizing at an early stage in order to unravel the complexity and show it in an accessible way to laymen, such as members of parliament and journalists, without losing the nuances needed to understand the issues relating to the topic. The legal basis of the CE system can be found in a Blue Guide, a 122-page document on the implementation of EU products rules (European Commission, 2016). It took months for the team to understand its contents and produce an infographic that explains the system in a nutshell (see figure 4). It was used in various presentations as a framework to contextualize our recommendations.

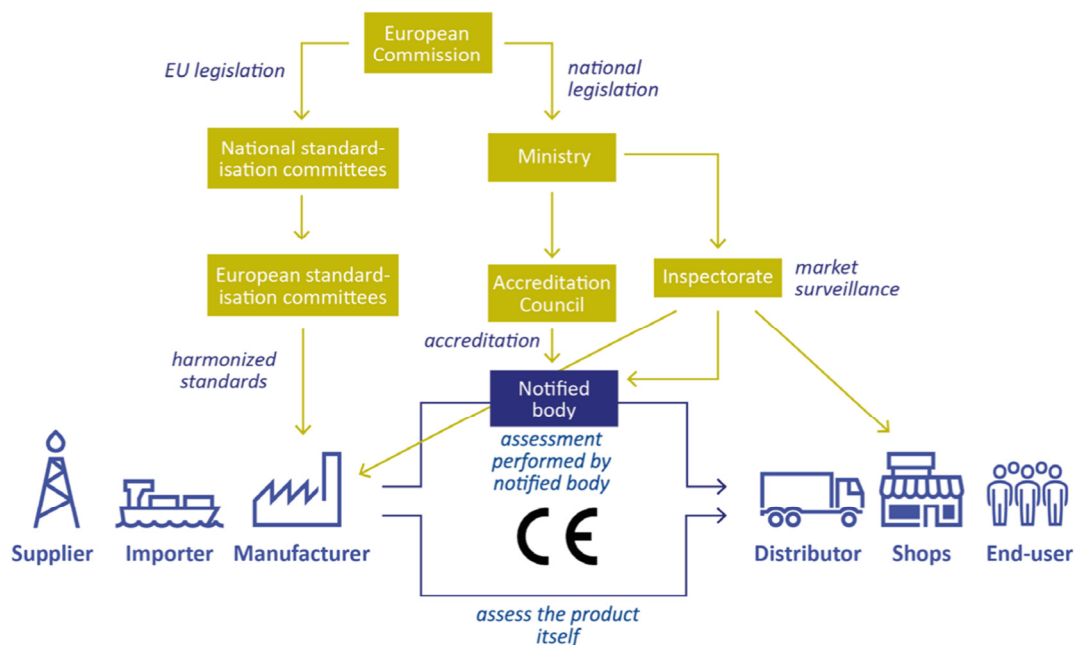


Figure 4. An infographic explaining the essence of the CE system (not published, NCA)

Using 'objects' (second order)

To deal with the complex environment, the audit team needed to think about how the audit report could make an impact. Publishing a thorough report with good infographics (first order) alone would not do the trick, they had to design the report as a whole, an entire story that would engage a broader audience. That meant that writing the story down and using good infographics would not be enough, we had to use methods that

would form the building blocks of the audit story. In the team discussions we would talk about how the report could become more engaging, e.g. how CE marking affected our own lives and the lives of our children. As at least four of the auditors had young children and they had to admit that most of the time they noticed recalls of toys in newspapers. Simply visualizing the data was not enough to address the concerns of young parents, so how could the team catch that urgency without compromising the supreme audit institution's standing? How could they give the data more meaning?

The team decided to select one specific item in the 'toys' product group from the list of notifications and follow it from supplier to consumer. The reason they selected this product group was twofold: it was the product group with the most notifications in the Netherlands, and toys was a product group which the team felt the most concerned about in view of its impact on the lives of vulnerable users. The key question was: how can an item that does not comply with health and safety standards bear a CE mark and still be on sale in stores? The team started by looking for items in the data that were still available in shops, and bought one. They then asked the responsible inspectorate to provide the notification file. The file identified the stakeholders (supplier, distributor, manufacturer) and stated whether a notified body had been designated for the product group. The team contacted the manufacturer and asked it to help reconstruct the 'journey' taken by the item. The reconstruction of the journey was based on interviews with both private and public stakeholders and on desk research. During the interviews the item functioned as a conversation piece (Gaver, 1999) which sharpened the team's focus and prevented the conversation from getting bogged down in a discussion of the entire CE system.

The team experimented with many different ways to visualize the product journey and discovered that it was not possible to capture the journey in one visual alone. Based on the available information they discovered that the best way to visualize the journey was to show three journeys the product made: its first time on the market, the rejected product and the current product. Figure 5 shows the final infographic of the toy's three journeys.

Reconstruction product journey toys

A reconstruction of the product's three journeys and the reasons why it entered the market with a CE marking but did not comply with EU rules.

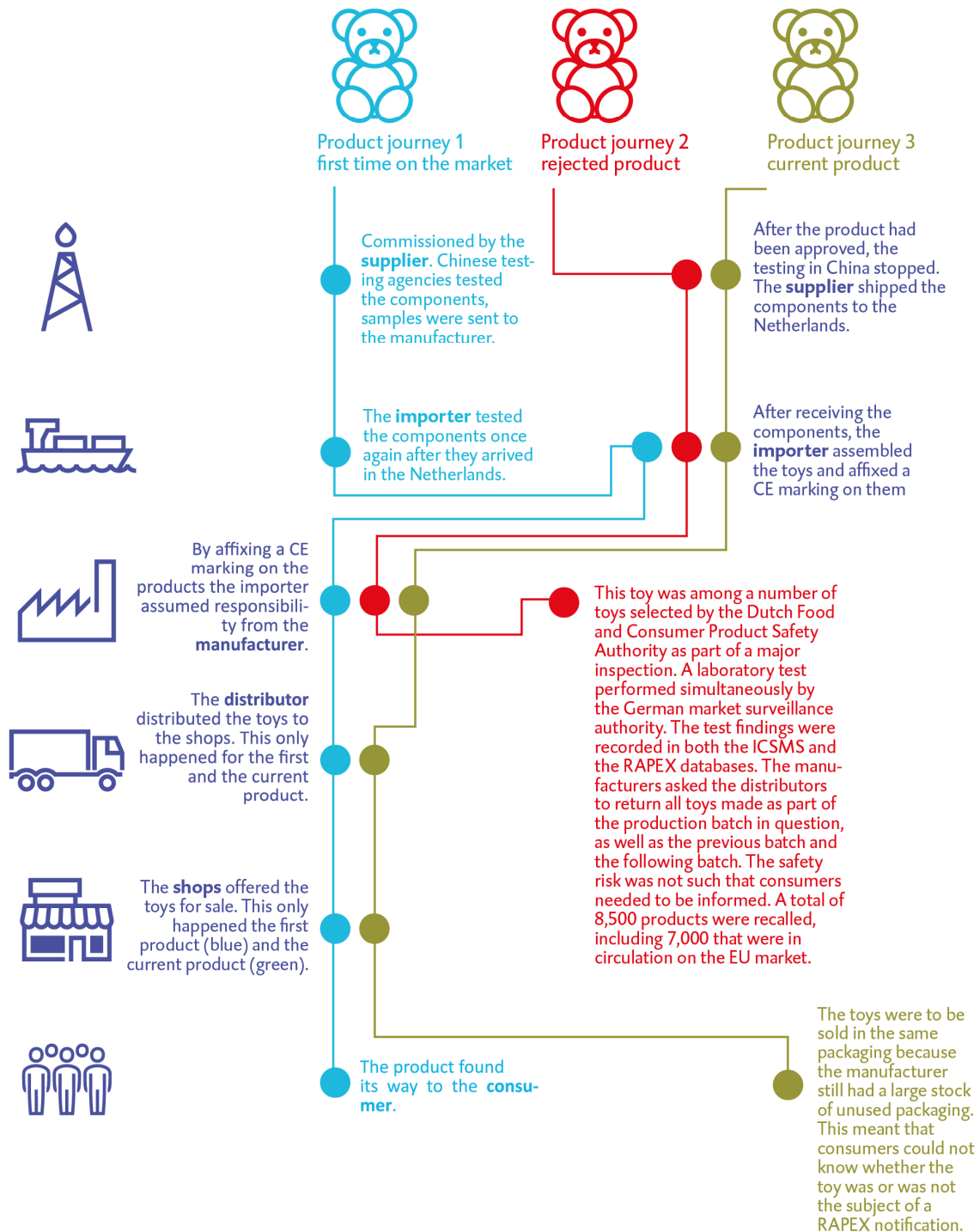


Figure 5. An infographic of a product journey (NCA, 2017)

After discovering which visual story could tell the story best, the team selected another product group. The top 3 notified product groups were: toys, pyrotechnics, and appliances burning gaseous fuels. Dutch law on the use of pyrotechnics is very different from laws in other countries in the European Economic Area, so the team decided to choose the third product group. Again they mapped out the selected item's journey, and again discovered insights about the system the team could use in the audit, e.g. the fact that ongoing technical safety discussions could be the reason why items that were considered unsafe by the inspectorate were still

on sale. These insights into the weaknesses of the system (and the infographics) were used in the final audit report.

The team named this self-developed design research method a 'product journey'. It not only helped the team gain more and different insights than data analysis and interviews would, it also helped design a more engaging product – our audit report. The data and the CE system were given more meaning, and it satisfied the team's personal wishes to have some pressing questions answered. Moreover, the audit was picked up by several journalists and their articles had many similarities with the way the audit story was presented in our report.

This approach differs from the first order because you have to look at the report as a whole: the report was 'directed' by the team. They added 'design abductive reasoning' to 'inductive reasoning', while they searched for ways to make people care (outcome – abductive reasoning) about the patterns they found in their audit (how – inductive reasoning).

Using 'interaction' (third order)

One of the complexities of the CE system is its transnational nature: 33 countries use CE marking as a passport for products to be sold in their markets. One of the audit report's recommendations was to improve the existing database and its use by the member states. But as the SAI of just one of the member states, the NCA was just a voice in the wind. In order to have an impact, the NCA needed to collaborate with other members of the audit community. It reached out to other SAIs in the 33 countries and hoped that they would pick up the same audit topic.

Knowing from experience that joint or collaborative audits would take a lot of time to coordinate, the NCA wanted to try something else. It came up with the idea of CODEA: COoperative Data Exchange and Analysis. The aim was to enable other auditors to audit CE marking in their own country, without coordination by or interference from the NCA in the form of data sharing. Four data visualisation students at Utrecht University of Applied Science were asked to design a tool that would help auditors from different SAIs understand and analyse CE marking data. The tool would address the problem that not all auditors were data experts, or were used to working with data. A two-day workshop in The Hague taught eight SAIs that were interested in carrying out a similar audit how to use the web-based tool. The team also presented six audit building blocks to help the other SAIs investigate the audit subject. Two SAIs that attended the CODEA workshop indicated that they would consider auditing this subject in their own country. In the end, you need one follower to bring these innovative plans further.

Again, this is an example of adding 'design abductive reasoning' to 'inductive reasoning'. We did not know what would work to find the collaboration that this audit needed. We tried to understand the needs of the CODEA participants (what do they need to execute the audit?), we designed a workshop and building blocks in order to get started with the results of the inductive part of the audit.

Using 'systems' (fourth order)

In 2000 Malcolm Sparrow argued to reform the practice of regulatory and law enforcement which, he wrote, "has more to do with changing the behaviour of regulators than with changing regulations" (p.1). It is not their job "to catch smugglers, it's to stop smuggling.", he said (2011). According to Aken and Andriessen (2011, p. 1, translated from Dutch) design-oriented research differs from explanatory research because it aims not only to describe and explain problems, but also to develop and test generic solutions to those problems. So, in order to find alternative strategies for inspectorates more attention should be devoted to problem- and risk-based solutions.

In our audit on CE marking we did not notice any problems in the regulations – the Blue Guide. The Blue Guide contained a well-defined system. But we also saw that unsafe products bearing a CE mark kept entering the market. That is why we recommended that the data and the database should prioritise *smarter* surveillance rather than *more* surveillance, and that 'the eyes of the consumer' should be used in that surveillance. It is important to notice that our recommendations asked for adding actions next to classical regulatory approaches.

Besides finding alternative strategies on CE marking, we tried to find alternative ways to increase our own impact. To strengthen our recommendations to make better use of the database, the team held workshops and presentations to share insights and data analysis methods. In face-to-face contacts with the inspectorates they formed a DOE coalition (Dutch for a 'doing' coalition, in keeping with the inspectorates' aim of changing

‘thinking about cooperation into cooperating’ (Rijksoverheid, 2018, translated from Dutch)) in order to establish a smarter inspectorate for CE marking.

At the moment the inspectorates are improving their working methods by using data analysis and cooperating more frequently and more effectively with the various data owners. In their working plans they state that they want to change their way of inspection in accordance with our recommendations. This means that what we designed – an alternative strategy in a complex system – was picked up by the inspectorates. If we had just followed inductive reasoning, we probably would have recommended to improve the information position of parliament because the data was not adequate. Now we took it a step further: what would really work to improve the system? The data was not adequate but what could we do to convince the inspectorate that the solution was in the data? And in the end, we did everything to ‘make people care’: we made engaging infographics, we followed a product journey to give the data more meaning, we searched for collaboration on the topic and we added our report with workshops about our analysis of the data in order to help inspectorates learn.

Second example: Information provision in the social domain

In the Netherlands various tasks to provide care to people in need have been transferred from national and provincial government to local government. Examples of care that were decentralized include care for children and adolescents, care for the elderly and informal care. This transfer in the social domain took place in 2015, and since then parliament has struggled with the way it is informed about the provision of care by local government. Parliament asked the NCA for advice on how the information it receives about the social domain by law could be improved (Algemene Rekenkamer, 2018, in Dutch).

The team decided not only to honour this specific request but also to address a related problem. Parliament receives a lot of information via websites and databases that is not always accessible. The team engaged a design researcher (author of this paper) to investigate this unwritten question.

The audit’s first goal was to explain to parliament what information it should receive by law, so this part of the audit was approached by means of deductive reasoning. The second audit goal was to show how the information could be presented in a more accessible and more useful way.

Using ‘objects’ (second order)

Besides sending the audit report to parliament, the team wanted to present a tool that would function as a signpost in the labyrinth of information. To design a tool that would meet parliament’s needs, the design researcher made a prototype which she tested with the MPs’ support staff. These staff members gather and analyse information to support the MPs’ work. The tool was designed as an interface for the database containing government information produced for parliament.

The first prototype was tested with the MPs’ support staff, and adjustments were made based on their feedback. The next iteration was tested with another part of the staff and the feedback was again incorporated in the interface. Finally, the tool, known as the Social Domain Signpost, was released together with the report. To offer other stakeholders a means to develop the tool, the NCA presented it as ‘open design’ and all the government information produced for parliament as ‘open data’, free for everyone to use and to design their own tool.

Using ‘interaction’ (third order)

The prototype developed by the audit team’s design researcher was used to promote interaction among the stakeholders. The team didn’t want to be the product owner but encouraged stakeholders to develop their own interface by integrating the tool into their own information services. The team deliberately focused more on the tool’s design and testing than on its technical features. The prototype was used as a conversation piece in order to test its accessibility and raise awareness that parliament’s problem involved more than just receiving enough information: it was also about the information’s accessibility and presentation so that it met the users’ needs.

Adapting design in the world of audits

The two examples described in the previous paragraph can be placed in Buchanan’s framework as shown in table 2.

Table 2: Design approaches used in two NCA audits, placed in Buchanan's framework (2015).

Audits	Symbols	Objects	Interaction	Thoughts
Products sold on the European market: unravelling the CE marking system	X (discover and tell visual stories)	X (giving the data meaning, product journey)	X (design a tool from perspective of target groups (SAIs))	X (help inspectorates carry out data and risk-based surveillance)
Information provision social domain		X (tool, open design and open data)	X (interaction through the Social Domain Signpost)	

Table 2 suggests that the four orders of design are quite distinct from each other but in reality they are interdependent. A compilation of visual stories (first order) creates an engaging, directed publication (second order), and a tool to promote interaction between groups (third order) overcomes the groups' reluctance to cooperate and therefore challenges the system (fourth order). We also discovered that the results of the design approach used in an audit can both overlap each other and differ from each other. But the main characteristics of a design approach – human-centeredness, iterations, tangibility – are found in the examples. Human-centeredness was strongly represented in the product journey. The auditors wanted the data to have a stronger impact because dozens of products bearing a CE marking posed serious health and safety risks and were having to be withdrawn or recalled from the EU market every month. This was a very design-oriented approach to the issue. The iterative approach was most apparent in the prototyping of the Social Domain Signpost. This was an example of innovation, as auditors normally do not share information that still has to be signed off. Visualising the legal information on product groups helped the team understand the topic better and heightened their need to gain more information.

The NCA's first encounter with design thinking lies in the first order. The NCA was persuaded to use more infographics, data visualizations and animations to get our message across. We first hired designers to make infographics when the audit was completed, but the complexity of the audits was difficult to portray and the infographics would go through many revisions. As the auditors did not feel that they owned the visuals, this was a side issue. Fortunately, the auditors themselves began to use information design and visual design, and in 2017 a pool of external designers was set up to co-create infographics while reports were being written. Nowadays, every audit contains infographics made with input from the auditors to portray the complexity of the audits and explain the nuances. Auditors tell their stories in words and images, and designers work with auditors to co-create visual stories, not just to fulfil an engagement.

As noted above, the four orders of design are interdependent. An audit that does not address certain system values can have effective infographics, but it will have a low impact. Designers working at the NCA should understand this, and the importance of asking relevant questions. This is when the use of different kinds of reasoning (Dorst, 2015b) can help.

The audit process is based on auditors taking a deductive and/or inductive approach to objective knowledge. All steps in the NCA's audit process are geared to collecting data based on exacting standards of research. That is why the audit process contains many steps to safeguard quality, including fact checking with the auditee and internal and external quality control. A design process uses iteration to allow for new information and to understand the user's needs. Designers use a design abductive approach to strengthen audit significance and impact. For design thinking to add value to audits the NCA should integrate the audit process with the design process, the knowledge-centred approach with the impact-centred approach. Although concerned mainly with the use of visual and information design in audits, Meijer (2018) suggests how the NCA could integrate the two processes, as shown in figure 6.

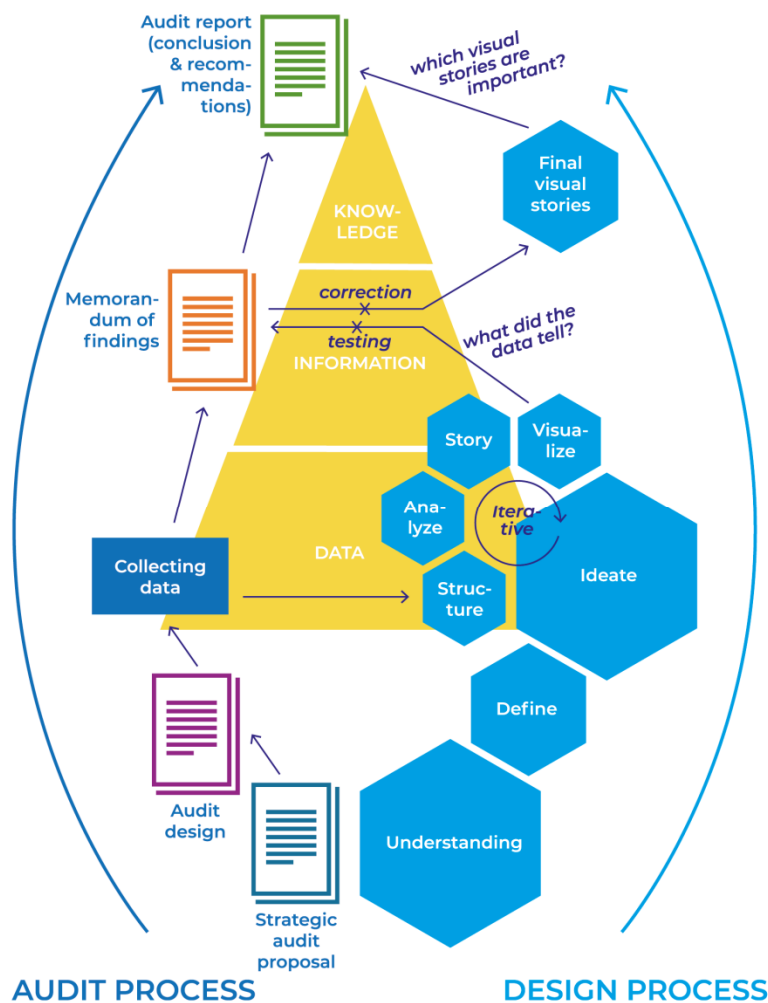


Figure 6. Suggested integration of the NCA's audit process and the design process (Meijer, 2018, p. 78)

These working strategies stimulate the adoption of design thinking in audits. Nevertheless, there is an important element in the world of audits that impedes the adoption of design thinking. The users of an audit are 'users' in a complex world. The users of the NCA's audits, the minister and House of Representatives, have different interests. Ministers want to prolong their political term and avoid any risks that challenge that term. The House of Representatives wants to put the screws on the minister in order to represent the interests of voters. INTOSAI (2018) warns SAIs about this risk:

When engaging with external stakeholders, a SAI needs to be mindful of potential risks such as being exploited for political purposes or being seen to be too dependent on international partners. Such risks need to be carefully managed, for example, through ensuring that the purposes of meetings are made clear to all involved in a transparent and accountable manner and the outcomes are documented and agreed. (INTOSAI, 2018, p. 18)

That is why the independence and autonomy of SAIs is the highest good and also increases the impact of audits. As Van der Bijl (2017) notes, human-centred design is about 'how to gain and apply knowledge about human beings and their interaction with the environment, to design products or services that meet their needs and aspirations.' (p. 2). There is a thin line between 'being exploited for political purposes' and 'meeting needs and aspirations'. Auditors cannot just meet the needs of their auditees in order not to be exploited. Yet, stakeholder engagement is an emerging audit issue. The SAI of Estonia (Asari, 2019, pp. 18-21) recently took stock of the engagement of stakeholders by SAIs. As one might expect the most common way to engage with stakeholders is through 'consultation', which presents the least risk to the SAIs' independence. And SAIs, of course, are very risk averse.

In view of the environment in which auditors work – fundamental differences in reasoning, independence while engaging with users and co-creating with designers who understand the interdependency of design orders and embrace the complexity of the audit topics – adapting design thinking to auditing is quite challenging. But like regulatory agencies, auditors are beginning to realize ‘that complex societal problems cannot be managed using traditional [...] tools’ (Malcolm & van der Bijl, 2016, p. 1). The NCA is convinced of the added value of the first order of design, but the other three orders of design are not yet daily practice. That is why the NCA is investing in a new community of practice: the Design Audit Studio. This community will aim on the further adaptation of design thinking in order to use it in the audit work and the audit process.

References

- Algemene Rekenkamer. (2018). *Wegwijs in het sociaal domein*. Den Haag: Algemene Rekenkamer.
- Algemene Rekenkamer. (2018). *Wegwijzer sociaal domein*. Retrieved from <https://www.rekenkamer.nl/publicaties/publicaties/2018/09/13/wegwijzer-sociaal-domein> [accessed on 1 Feb 2019]
- Asari, E.M. (2019). *Inform – consult – involve – collaborate – empower*. International Journal of Government Auditing, Winter 2019, Vol. 46, No. 1, 18-21.
- Bijl-Brouwer, M., van der., & Dorst, K. (2017). *Advancing the strategic impact of human-centred design*. Design Studies, Volume 53, November 2017, 1-23.
- Bovens, M. (2007) *Analysing and Assessing Accountability Conceptual Framework*. European Law Journal, Vol. 13, No. 4, July 2007, pp. 447-468.
- Buchanan, R. (2015). *Worlds in the making: Design, Management, and the Reform of Organizational Culture*. She Ji: The Journal of Design, Economics, and Innovation, 1(1), 5–21.
- Caluwé, L.I.A., de. (1998). *Denken over veranderen in vijf kleuren*. Tijdschrift Management & Organisatie, 4, 1998, 7 – 27.
- Dees, M. (2010). *De public sector auditor - trait-d’union in het openbaar bestuur*. Breukelen: Nyenrode. [citation translated from Dutch]
- Dorst, K. (2015a). *Frame creation and design in the expanded field*. She Ji: The Journal of Design, Economics, and Innovation, 1(1), 22–33. doi:10.1016/j.sheji.2015.07.003
- Dorst, K. (2015b). *Frame innovation: create new thinking by design*. Cambridge: The MIT Press.
- European Commission (2016). *Commission Notice. The ‘Blue Guide’ on the implementation of EU products rules 2016* (OJ 2016, C 272/01).
- European Commission. (n.d.). *CE Marking*. Retrieved from https://ec.europa.eu/growth/single-market/ce-marking_en [accessed on 1 Feb 2019]
- Gaver, B., Dunne, T. & Pacenti, E. (1999). *Cultural probes*. Interactions, Volume 6, Issue 1, Jan./Feb. 1999, 21-29.
- INTOSAI. (2018). *Strengthening Supreme Audit Institutions: A guide for improving performance*. UK: National Audit Office. Retrieved from http://www.intosai.org/fileadmin/downloads/downloads/4_documents/publications/eng_publications/ENG_CBC_2018_Strengthening_SAIs.pdf [accessed on 5 Feb 2019]
- Malcolm, Bridget and van der Bijl-Brouwer, Mieke (2016). *Developing a systemic design practice to support an Australian government regulatory agency*. In: Relating Systems Thinking and Design Symposium (RSD), 13-15 Oct 2016, Toronto, Canada.
- Meijer-Wassenaar, L.C.M. (2018). *Discover and tell visual stories in audits: using visual design and information design at the Netherlands Court of Audit*. Retrieved from <http://auditinvoorm.nl/how-to-discover-and-tell-visual-stories-in-audits/> [accessed on 1 Feb 2019]
- Rijksoverheid (2018). *Ketensamenwerking*. Retrieved from <https://magazines.rijksoverheid.nl/inspectieszw/jaarstukken/2019/01/samenwerking-3> [accessed on 31 March 2019]

Sparrow, M. (2000). *The regulatory craft. Controlling risks, solving problems, and managing compliance*. Washington: Brookings Institution Press.

Schaminée, A. (2018). *Designing with and within public organizations: building bridges between public sector innovators and designers*. Amsterdam: BIS Publishers.

The Netherlands Court of Audit, (March 2016). *Trust based on understanding: Netherlands Court of Audit Strategy for 2016-2020*. The Hague: Algemene Rekenkamer.

The Netherlands Court of Audit. (2017). *Products sold on the European market: unravelling the system of CE marking*. The Hague: Algemene Rekenkamer.

Van Aken, J. & Andriessen, D. (2011). *Handboek ontwerpgericht wetenschappelijk onderzoek. Wetenschap met effect*. Amsterdam: Boom uitgevers.

Vide. (2011). *The Regulatory Craft revisited*. Retrieved from http://toezichtenwetenschap.nl/keynote_sparrow [accessed on 5 April 2019]

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