

Infographics as a tool for business agreement

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Abstract

The paper analyzes infographics as a problem solving tool acting as a medium for establishing dialog in the business context. Business needs agreements, usually made in a written-form in a document called “brief”. The infographic work can be considered a form of visual agreement for the participants. We present two case studies that consider the use of particular elements and cognitive processes involved in this visual agreement strongly connected to synthesis in dialog, memory and message clarity.

By analyzing the visual language structure of real case infographic projects of the national housing social debt collection process (Infonavit, 2010) and the problem of child obesity (OMS, 2008) where drawing plays a major role as a tool to communicate the operation of visual imaginary, we suggest a prominent role of infographics in the shaping process of the client’s inner topology.

We introduce a preliminary analytical framework –drawn from studies and theories like Dual-coding Theory (Paivio, 2006), rhetoric, neurocognitive processes (Kosslyn, 1986), aesthetics and language philosophy (Goodman, 1978)– to understand how this visual agreement denotes and connotes unstated viewing conventions and prioritize particular interpretations that can affect the final solution.

Keywords: *infographics, agreement, business, visual language.*

1. Business briefing: creating agreement between the parts involved

During business practices it is common, at the beginning of a project, the staging of a negotiation act, where the clients seek to have a problem solved under certain conditions that are to be met by a service provider. This initial problem is usually solved by the provision of a written statement of the project requirements, broadly known as a project or design brief its intention is to state all of the possible needs that its necessary to solve. The project brief aims to communicate clarity in all of those needs expressed by the client and are to be met by the business team.

2. Agreement as sharing common ideas about a subject

The brief is a written medium intended to create agreement between the parts involved, all parts in a business project must have the same perceptions about the project necessities in order for the team to deliver an unified effort and answer to its requirements.

Traditional business models brief their team members in a number of meetings where the brief's contents are reviewed until common sharing and understanding is supposed to be achieved. If no consensus is found the brief's points are usually debated until some degree of agreement is met. If we understand briefing as a way of sense making in business, then it is about the creation of a perceptual structure of the problem that enables solutions, the structure of problem in few cases is purely linear so it can respond to the linear nature of the text in a brief. In this paper we explore the possibility of using imagery as a way to better understand complex problems and it implications in a business process.

3. Image as a way of enhancing agreement

Communication has a direct connection with human production, it is possible to say that business is a sophisticated form of communication that has the intention of generating economic profit. The dialog between parts in a business negotiation is focused in embracing contextual information to make decisions, and to then propose solutions, all of the variables included in this process are complex and have cause and effect relationships among them, this causes the agreement process to rely on the effectiveness of communication.

Communication, in order to be more effective, needs to expand the linear linguistic representations (the brief) as we can see in the construction of any knowledge that uses charts, graphs, flow diagrams, icons, etc. where images represent a complementary resource to understand a specific circumstance. This kind of thinking is regarded as complex by neuroscientist S.M. Kosslyn and it involves the use of several mental representations, one main reason for this, is the use of the different parts of the brain involved in the cognitive process (Kosslyn, 1999). The representational parts of the brain do cognitive processes and Kosslyn, named the result of this process *visual mental imaginary*; it is the result of the activity that relates associative memory with the capacity of internal visualization.

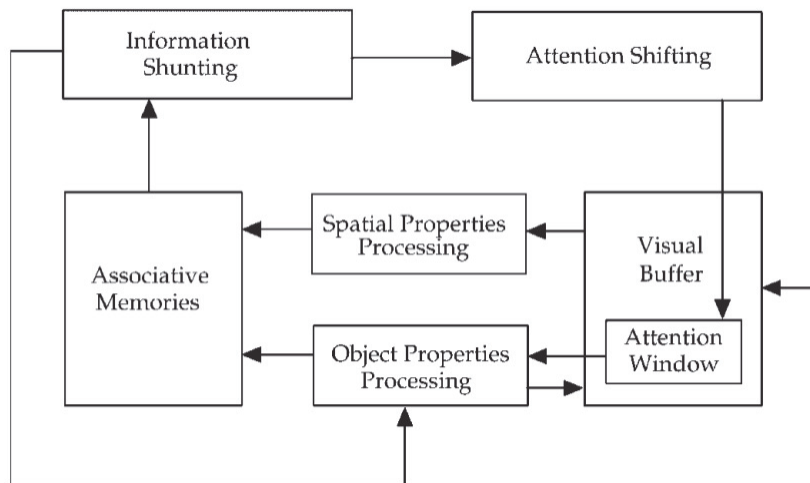


Figure 1. The major processing systems posited to be used in visual imagery and the later phases of visual perception.

Images can project more information than the linguistic content in the beginning, for example something that we visualize we can be sized, moved, compared, analyzed and remembered, as it is operated and kept in memory.

4. Dual Code Theory and memory

Dual coding theory has its roots in the practical use of imagery as a memory aid 2500 years ago (Yates, 1966). The memory emphasis evolved into broader applications of imagery aimed at accelerating the acquisition of knowledge. Language was always implicated but became explicitly involved as an educational partner when imagery began to be systematically externalized as pictures. (Paivio, 2006. p.1)

Cognition according to DCT involves the activity of two distinct subsystems, a verbal system specialized for dealing directly with language and a nonverbal (imagery) system specialized for dealing with nonlinguistic objects and events. The systems are assumed to be composed of internal representational units, called logogens and imagens, that are activated when one recognizes, manipulates, or just thinks about words or things. The representations are modality -specific, so that we have different logogens and imagens corresponding to the visual, auditory, and haptic (feel), and motor properties of language and objects. The representations are connected to sensory input and response output systems as well as to each other so that they can function independently or cooperatively to mediate nonverbal and verbal behavior. The representational activity may or may not be experienced consciously as imagery and inner speech. (Paivio, 2006. p.3) It is important to consider the use of both systems can provide a wider conceptual network that conveys ample meaning to ideas exposed. Visual language is an increasingly used medium to provide support for verbal language, creating image-enabled discourses (Snyder, 2011)

5. Visual language as a facilitator of symbolic systems for dual coding in business

Visual representation is a language that enhances verbal language and also can show us an expanded territory of the experience or discourse. Visual representation is a synthetic form of communication, it is an abstraction of the relevant variables of a problems represented in a synthetic maps of relations, as Elliot Eisner describes, visual representation stabilizes an idea, like the impression of the problem, the relationships of the related variables, the universe of a concept, or the multiple elements of a business situation, as Eisner (2002) explains:

“Representation can and often does begin with an elusive and sometimes evanescent idea or image. I say evanescent because there is nothing quite so slippery as an idea; here now, gone a moment later. Images emerge and, like the subtle changes of the setting sun, may be altered irrevocably with a blink of the eye. Representation stabilizes the idea or image in a material and makes possible a dialogue with it. It is through “inscription” (I use the term metaphorically) that the image or idea is preserved—never, to be sure, in the exact form in which it was originally experienced, but in a durable form [...]

Trough visual representation a common code or symbolic system is constructed in a way that it makes possible to socialize ideas, to communicate and explain them, to generate common sense, it constructs a common map of the elements and relations involved in a business facilitating the agreement process among participants. (Gumperz, 1982) Some visual representations used in business practices include, diagrams, schemes, maps and infographics.

6. Infographics as a symbolic system for business process

Infographics are useful tools to forecast possible scenarios for business outcomes and are helpful to create a strategy roadmap that responds to these outcomes, it allows adapting resources in accordance to them. Graphical representation of the business process is a way to see the future and plan the desired outcomes in accordance. In this way images represent, not only, the business process itself, but an agreement about the trajectory of its possible results. These symbolic systems facilitate sharing of ideas and knowledge, during a business briefing these images become the nonverbal part of a dual-coding process while the moderator or participants listen to the explanation of the briefing accomplishing both a non-linear interpretation of the problematic and an enhanced memory of its arguments. Making easy the evaluation of opinions and planning ahead (Bresciani et al., 2010), fundamental needs of a business process. Infographics become a symbol of the agreed terms.

The use of symbolic systems in business is useful to determine boundaries, relation of parts of a problematic and its relative scale, so as their evolution in space-time. The use of a dual-coding approach engages participants' perception: infographics are a common way to integrate image, narrative, and non-linear reading to a business meeting completing stimuli for both symbolic systems. Both systems, verbal and image, although independent, have some degree of overlap that facilitates long term memory, context grasping, and making inferences and transformations of the symbolic information (Paivio, 1971), as a result, participants are likely to pay more attention (Kerbach et al. 2015), therefore facilitating dialog, that uses the same codes, during business briefings and negotiations.

In contrast, the exclusive use of textual briefing has the major disadvantage of presenting the structure of the problem in an one-dimensional fashion, not making easy for the problem-solver to grasp all of the possible interactions and parallel processes that a problem may present and how these processes are affected by other elements in the relationship structure.

Visualization, as in the case of business infographics, is a way to provide a criteria-unifying picture system based on conceptual depiction and notation of the relationship structure. According to Goodman (1976), pictures are mainly denotative, diagrams as pictures, generally are non-notational, but in the case of business infographics images can stand for both a representation and a notation depending on the degree in which a symbolic system is conveyed to express the meaning or the structure of the depicted elements in the infographic. Images play a key role in the mapping of these relations. Context-rich graphic alternatives complement textual briefing by the use of coding alternatives that incorporate symbolic systems in the form of sketches, graphs and images constituting an infographic.

Graphic information helps to make sense of data by linking it to a formal structure that explains, by nature of graphical language, certain traits of the problem such as the elements involved, the relation of its parts, the succession of events and the magnitude of its elements. Images create a *frame* for the business process. Infographics represent through graphic information a cognitive structure that guides perception and the understanding of a [business] reality. (Goffman, 1974, p. 11-12). These principles are acquired in an unconscious way along with communication processes, and effectively structure which elements of reality are perceived. Infographics is a way to represent and explain the relations of the elements of a problem in an open space that allows to add layers of complexity and develop deeper explanations in a way the viewer is able to see at once many of its characteristics instead of dissociating them as in the case of textual reading, where events happen one by one, and one after the other.

The textual brief can be interpreted in a visual sketch, which later is refined in a graphic image of the relationship network of its components (Infographic). Infographics become the *imagery system* while the exposition of ideas works as the *verbal system* of a dual-coding approach. (Paivio 1978 p. 41)

The infographic as a representation of the elements of a problematic and how these elements relate becomes a powerful tool to provide understanding to each part of the problem while making clear how the possible solutions can impact the whole network. The infographic becomes a tool to forecast how solutions will impact the outcome of a problem.

Gaining comprehension on how proposed solutions can impact the outcome represents an advantage in terms of communication with the client and what makes the agreement process easier. The use of visual language in the agreement process not only clarifies possible doubts but also gives a general view of its complexity.

7. Case studies

Case studies are shown in a synthesized form, using some aspects of (Hullman et. al 2011) framework for rhetorical analysis.

7.1. Infonavit. Towards a consolidation of efficiency in the collection process of Government loans

7.1.1. Context

Infonavit is the most important government institution for home loans in Mexico, since its foundation in 1972 it has granted more than 7 million 659 and 965 credit loans (Infonavit, 2013). In 2008 their social collection office wanted to reposition their retribution process within their inside employees and communicate their model to the external audiences integrated by credit holders, developers and general public because there has been some conflicts and misunderstandings regarding public perception and media actions. Infonavit main commitment is to develop and promote good quality house solutions that create economic and social wellness for Mexicans and less impact in their environment.

7.1.2. Challenge

They were looking for opportunities regarding better communication and operative practices towards a user centered and social collection as well as better achievement for the Non Performance Loans (NPL).

Infonavit's Social Collection model was not clearly communicated from the inside of the organization, there were mainly four departments in charge to operate the model: Preventive, Management, Non performance Loans and Specialized Collection. Each of them had only a fragmented view of the process. Another problem was that in order to operate the collection of the credits Infonavit relies on Centers of services call (CESi)

—where the credit holder needs to contact directly in case he or she has a problem— and an external supply network (called “Infonavit ampliado”) a force of promoters that go directly to the home and leave messages with different language tones and have their own methods of collection, some of them, could easily be qualified as threatening. As a result Infonavit collection strategy is confusing and not coherent for the credit owners, some of them might even be afraid to contact the organization and some times they would even not open the door to their home or get away as soon as they see a promoter coming.

7.1.3. Case development

Insitum is a Mexican innovation consultancy that relies on ethnographic methods and user centered approaches to help clients innovate. Infonavit had been working previous projects with us and attracted by the deliverables that included an infographic instead of a thick report asked us to help them with this particular project.

We had a first encounter in a meeting and set the business agreement within the realm of a communication piece that would help organize the messages and could evolve in an Identity guide of procedures and educational materials. One of the key aspects was the client pushing for the generation of the infographic without the design research phase, but we convinced them that in order to make the infographic we needed to understand the process and scope of the project from the different collection departments. We started the with a series of interviews with directors of each area and mapped the process according to their perspective.

7.1.4. Editorial Layers

According to Hullman's analytic rhetorical framework, an information visualization piece is generated based on various design definitions based on the presentation of the information, which significantly influence audience responses. They call this editorial judgments mixed with rhetorical techniques used to convey meaning.

The editorial judgments used to map the collection process of Infonavit was based on a metaphor of a popular board-game called “Ladders and Snakes” its general structure is a hive-like group of cells, where the player starts from the bottom, rolling the dices and advancing sequentially, if the player falls in a space of a “good deed” he will climb up the ladder a few steps further and if the player falls in a space where a “bad situation” is represented he will go down following the trace of a snake and goes back some steps toward the beginning, at the end the player that falls in the most “good deed” cells is the one that advances faster until it reaches the top cell.

The tone of language that Infonavit used to get in touch with their stakeholders was coded similarly to road's and transportation color system, where green is a state of normal condition and continuity, while yellow conveys a state of preventive alert, orange is the middle alert stage, it continues to evolve until it reaches extreme alert represented as red. At this stage messages needed to be more precise, focused on actions more than in threatening.

Interviews' data was mapped for each department in a visual display that showed each area's approach of collection and their own logistics: main actors involved in the interaction, pieces of communication with type of messages and product solutions for each stage. The visual display was divided by a horizontal line that separated all the internal activities and the external audiences that were identified. (see Fig. 1.0).

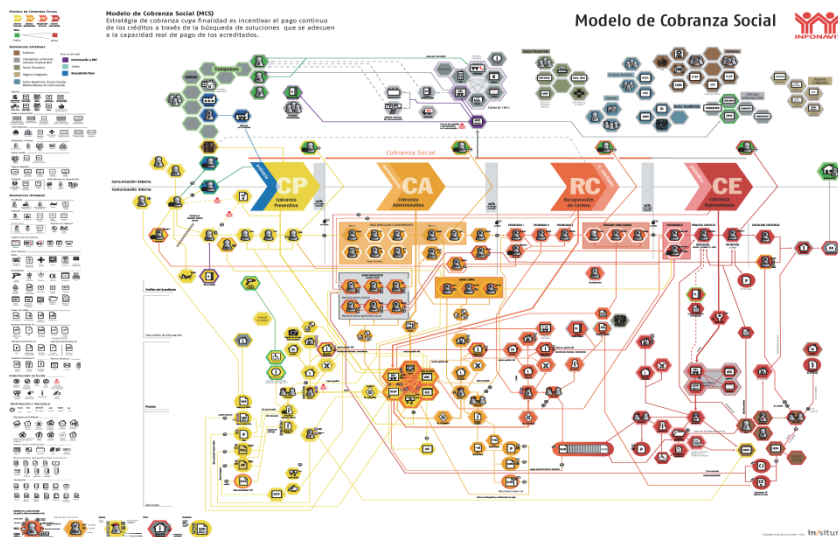


Fig. 1 Infographic of Infonavit's social collection process

Based on Dan Roam's framework (2008) of "6 W's" or six problem "clumps" that can be solved with pictures we considered the next variables in the visualization:

1. - *Who and What problems.* Actors involved in the process and type of messages generated
2. *How much problems.* Challenges that involved measuring and counting but we did not analyzed costs but resources.
3. - *When problems.* Challenges that relate to scheduling and timing as well as frequency.
4. - *Where problems.* Actual places where interactions were taking place. (CEsi's, homeowner's homes and neighborhoods, Delegations (Infonavit regional centers of operations)).
5. *How problems.* We analyzed the media and channels the messages were communicating to the audiences and kind of activities they were taking place

And finally

6. - *Why problems.* We also analyzed the relation of all the actors, places, tools and facilitators involved in this phenomena aligned with the Institution's mission statement.

It is important to stress, that Infonavit had never seen the whole process together at this level of detail; each department only knew the process from its perspective. The design of an infographic of their debt collection process, opened new perspectives, making possible to share tangible information and seeing causes and effects of each stage.

Being able to see the whole message system made possible to understand what does that the absence of solutions and omission meant for the process. It allowed promoters and managers to plan targeted actions to problems and to detect customers that were not receiving or received incoherent messages. One example refers to the “chapulines” (grasshoppers): workers that the system flaws to identify because every two months they change working places, Infonavit already knew about their existence since their initial stage in preventive collection, but after the mappings they saw that there were no channels or efforts being done to communicate with them, so they considered to implement alternative methods. (See Fig. 2.0.).

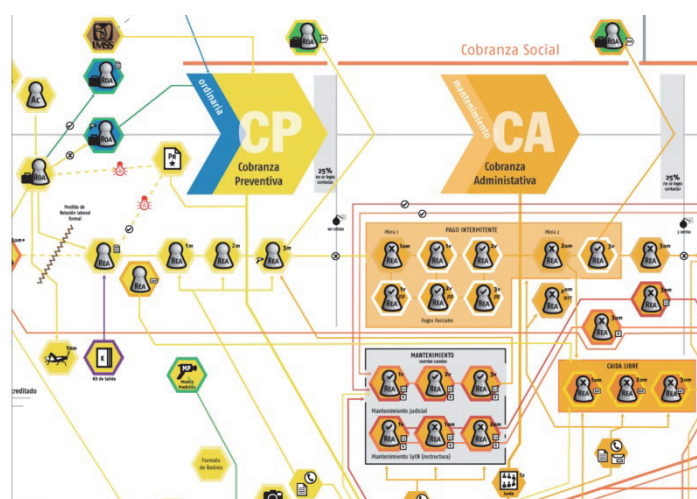


Fig. 2 Infonavit visualization's detail on the lower left side the “chapulin” cell is shown without any visible communication channel.

Workshops around the country were organized for different groups to validate the information, and every time people found new insights and shared the information among them.

After the workshops a guide was designed to explain each stage in the collection process also, templates of messages that set the communication tone for each stage were shared. These materials were used to create short animated videos to communicate Infonavit collection process to external audiences. (See Fig 3.0).



Fig. 3 Infonavit's promoters participating in a workshop.

7.1.5. Results

Infonavit's infographic provided a general understanding to external audiences and resulted an excellent strategic tool for employees to identify restrictions, locks and barriers within the process. It evolved into educational material that helped the organization move towards a better understanding of their clients and achieved a more efficient collection process. (See Fig. 4.0).



Fig. 4 Infonavit's Education materials

7.2. Fighting together against child Obesity

7.2.1. Context

The National Survey of Nutrition and Health in 2012 scored Mexico as the first ranking country of population obesity. It created an exponential reaction from media and official sectors. Obesity problem in Mexico involves different scales of approaches and involves all kind of groups from government, academic researchers, organizations, industry and the family nucleus in relation with the environment. In august, 2012 we were approached by a strategic design consultancy specialized in communication and public polices to develop graphic materials to make this complexity understandable and create awareness for possible actions.

Excessive weight problems start from feeding habits of a person, but are imbedded in culture, life style landscape, deficiency of health services regulations that affect the individual and the collective. To solve this problem we need to act collectively and in an integral way.

The government policy in Mexico at the time, was leaning towards an increment on prices of some industry products like sodas, candies and snacks so the industry was worried and wanted to communicate that besides those regulations the population needed to take action about their feeding habits based on the understanding and control of their own energetic consumption.

7.2.2. Challenge

The visualization needed to communicate information for different stakeholders without blaming actions on any particular actor or sector, at the same time, it needed to convince the audiences of the problem dimensions in a wider context and communicate concrete actions based on their immediate solutions.

7.2.3. Case development

After the first encounter with the strategic firm a business agreement with three different visualization examples was sent, the proposals varied in the illustration style and complexity of what they were picturing. The approach was very helpful to identify the level of complexity the client was expecting and the iconic language of the piece, it also helped to set the the visual style tone, which was linked directly to the diverse audience spectrum.

In Fig. 5.0 an example of the actual business proposal is shown, using different levels of complexity in infographics so the client could understand the amount of worked involved in each category based on style.

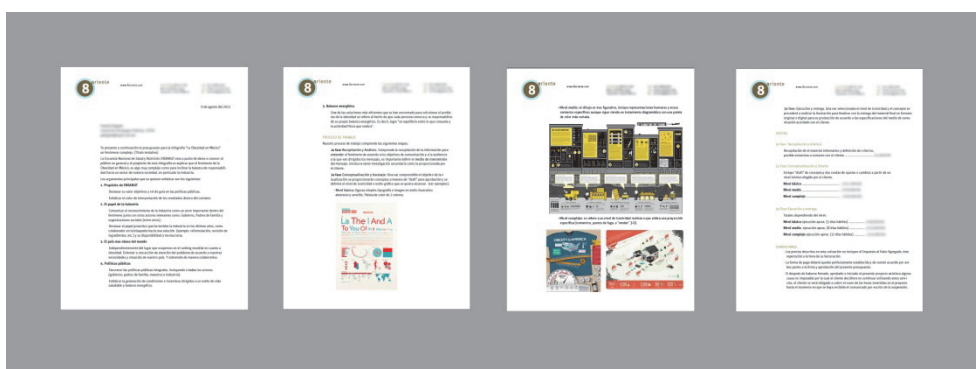


Fig. 5 Business proposal agreement showing types of infographic categorization.

Once the tone and iconic complexity level of the piece was set, we continued to explore the concept with the client who provided statistical and academic research regarding the problem.

After reviewing all the information we concluded that the piece needed to address 5 concrete immediate actions suggested to the government by the OMS (Armstrong et al 2008).

1. Diminish consumption of sugar, fat and sodium.
2. Reduce energy density of the diet
3. Increase consumption of fruits, vegetables and fiber.
4. Promote the consumption of plain water.
5. Increase physical activity.

We reached three conceptual sketches and the client chose one that depicted the problem as complex but it left the 5 concrete actions for different stakeholders clear. The development of the final concept took a lot of rounds and almost at the final stage the client decided to change the concept to a dual composition where we showed the main causes of child obesity in one side and the solutions for each stakeholder on the other. (see Fig. 6.0).

This change compromised the design because it led to a busy display of information which was difficult to read by all audiences. We let them know, but they considered to be in the safe zone if they relied on textual information instead of just iconic information. At this point we believed decision-making was rushed for having the design done so there was not enough time to reflect on how the different audiences were going to approach the information piece.

7.2.4. Results

The final infographic was never released to the public because of contextual and political circumstances that we don't need to board on the scope of this paper. The idea is about how designers have been able to implement a visual dialog with their clients imbedded in the process, going from the business agreement materials to the series of iterations in the conceptual stage. In this case by showing a typology of infographics, it made easier for the client to understand concepts such as complexity and level of iconicity.

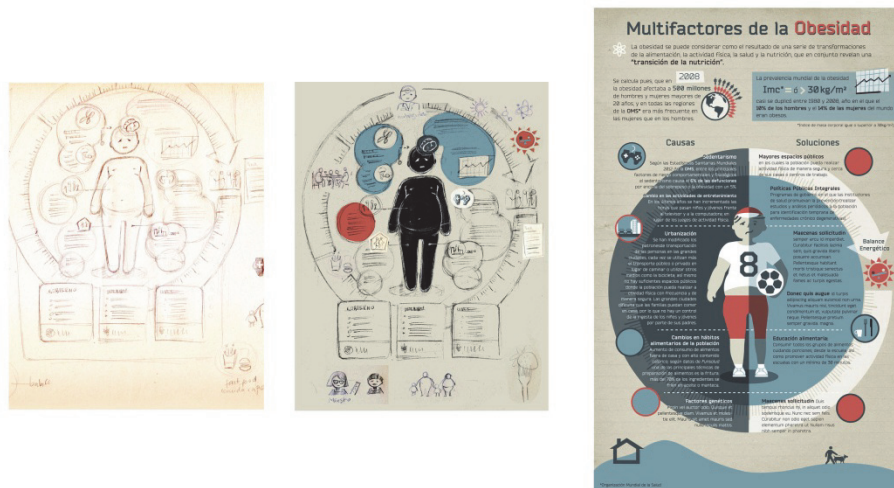


Fig. 6 “Multifactores de la obesidad” conceptual development process, on the left earlier sketches and final piece in the right.

Infographics is a business agreement tool because it involves making sense of a problem and its relations. The cases shown in this paper represent evidence that demonstrates how infographics help to identify the elements involved in a complex process. An infographic is a spatial and kinetic representation of cause and effect, hierarchy and relations. It works by creating a visible map to assign commonly agreed symbols that act as a referent for all actors therefore creating agreement.

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