Towards Strategic Media

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Abstract. We assume that visualizations will increasingly not only display data, but allow for actions and the execution of strategies *within* visualized environments. With the term strategic media we refer to media applications supporting the activities related to the design and implementation of strategies in business or personal contexts. Inspired by so called strategic dash boards for the business context we ask, what could be useful design heuristics supporting such strategic media applications in general. As a starting point we propose, that strategic media integrate *aspirational*, *executional/transactional* and *epic* aspects representing intentions, functionalities critical to implementation and long term monitoring and feedback. Three conceptual prototypes developed by the author illustrate the concepts.

Keywords: Visualization, visual interfaces, strategic, epic, aspirational and transactional interfaces, business software interfaces, dashboards.

1 Introduction

Under strategic activities we subsume the sequence of actions from defining goals/intentions, the collection of relevant information, a planning phase leading to decision making and the implantation of the strategy followed by some sort of a feedback channel to ensure long term effects. While there are whole industries occupied with the middle processes in this sequence of actions, the very beginning and the end of this sequence, i.e. representing strategic goals and long term interactions seem less explored and commercialized. When we propose the concept of "strategic media" thereby referring to applications supporting all steps of strategizing, we would need to integrate and support exactly these activities. We believe that ambient intelligent media in the wider sense with visualized interfaces may be a promising approach for such strategic applications.

Visual interfaces may still not be as widely accepted as one would expect them to be. Business analytics and data visualization become increasingly intertwined and open up new opportunities for all sorts of visual interfaces also within ambient media. Various tools help to visually identify trends, patterns and anomalies thereby supporting decision making. Inspired by these dashboards and business performance management systems we would like to enquire general design principles supporting various strategic activities.

R. Wichert, K. Van Laerhoven, J. Gelissen (Eds.): AmI 2011 Workshops, CCIS 277, pp. 19–24, 2012.

2 Strategic Media with Aspirational, Executional/Transactional and Epic Aspects

When exploring heuristics for the support of strategic activities we will use the notion of *strategic media.* All activities including the execution of the strategy are meant to be supported within *one system* connecting strategic and tactical activities on every level. Every strategy starts with ideas, intentions, preferences, goals, objectives which then become subject to planning activities. We subsume these aspects under the notion of *aspirations* in the widest sense. Strategic media somehow should allow for the representation of aspirations as counterfactual form of information as opposed to factual data. We are aware, that the nature of goal-oriented behavior is discussed and questioned within various disciplines, but for the time being we do find it a valuable approach to facilitate interactions in relation to their underlying aspirations.

Aspirational information is by its nature highly sensitive and unlikely to be communicated freely, it is therefore realistic to offer it optionally and or let profiling systems generate it according to predefined privacy settings. Users may not be able or willing to explicate this information and represent it in even well protected systems. This kind of *aspirational* media could also represent opportunities for search engines and match making software.

The idea of *actionable interfaces* [2] has been discussed in the literature around strategic dashboards[3]. Applied to ambient and visualized media, we find it desirable link visualization, the execution of strategies its related interaction as close as possible. Many visualizations allow the display of information, but do not facilitate other functionalities. They may offer form, but actually little function. How could media look like, where the actual visualizations facilitate not only the display, but also strategic interactions and execution of strategies? The advantage would be a direct contextualization of information and the related actions/reactions, therefore highly intuitive decision support systems facilitating action. In the context of financial trading platforms e.g. the dominant activities become transactions. For example, Bloomberg's [4] proprietary "Launchpad" is a case of a highly visual system displaying information of financial data, mostly in charts. It could easily be envisioned with different and more complex visualizations than charts and market maps combined with the trading interfaces. In the corporate environment we have seen various approaches to dash-boards displaying information to the management, e.g. often in the metaphor of a tachometer. All these examples merely display visualizations, but they do not usually facilitate the interactions related to them. Often the type of visualization may be altered and also the values change, but there are usually not contextual interactions offered. Acting on the information requires usually a switch into another menu or window. The proprietary trading platform of Saxo Bank [5] allows opening the trading window from within a chart, which is a step towards the integration of information display and interfaces. But like most of today's complex systems it still requires different cognitive models for the understanding of decision relevant information and the execution of actions. It does not support the representation and planning of actions, i.e. the process of strategizing.

Any strategy relies on feedback and needs to monitor its outcomes. Representing long periods of time therefore seems in any strategic view important. Therefore we argue, an epic kind of representation is for most applications desirable. A chronologically, as the "life streams" envisioned by D. Gelernter [1] seems plausible for most applications, but other organizing principles may also be possible. Instead of accumulating unstructured disconnected interactions (actually a form of micromanagement), it seems advisable to capture long-term information in some sort of "big picture" approach. A challenge for epic media is how to aggregate meaningful abstractions over qualitative data. Generally speaking an epic view on data helps to form a coherent system offering various levels of abstraction. In the age of social media and services like Facebook or Apple's iTunes which may accompany us through a life time this aspect may become a relevant factor for the construction of our identities.

2.1 Selected Projects

We would like to introduce three conceptual sketches developed by the author and derive from them ideas for strategic media. All three could be envisioned as ambient solutions based on sensory input, speech recognition, gesture recognition and other in and output channels. They also may be more or less displayed on ambient and/or mobile devices.

Strategizing and developing goals in the context of large organizations is subject of the *Big Picture*.[1] Project. In this visual editing system, all business management activities including the communication for the strategic management of large organizations are supported. *Big Picture* is based on the strategic management approach "Balanced Scorecard" by R.S. Kaplan D. P. Norton [6] from the Harvard Business School. This methodology allows capturing organizational strategies in the form of "strategy maps" displaying all activities within an organization and aligning them to the organization's overall strategic goals. The traditionally 2D chart-like strategy maps are here embedded in a 3D landscape, for at all processural levels of an organization with all their initiatives and key performance indicators etc.

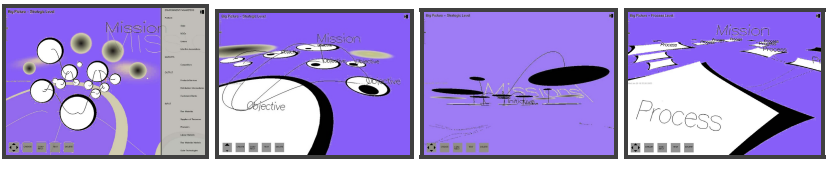

Fig. 1. Big Picture 3 D Editing Tool, Screenshots from Strategic Level with Main Menu and the Process Level

[1] The first software prototype was developed by the author during a grant of the European Union hosted at the V2 Lab in Rotterdam 2005 and programmed by Daniel Stucht.

As an alternative to conventional dashboards we install a dynamic visual pattern conveying the overall state of the organization. This display serves as executive information system showing selected customizable aggregated data for the senior management. The semantics of these patterns are to be understood intuitively allow drilling down into the underlying business analytics and strategic initiatives, yet providing an intuitive ambient display.

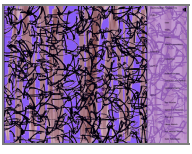

Fig. 2. Animated "Big Picture" Level

Presenter is a sketch of a visual approach to the biographies of individuals and illustrates an example of epic representation. This system could be applied be relevant support for social networks, visualizing the past and future aspirations of individuals via a visual interface. The user's past, present and future but also their intentions and aspirations are represented on a vertical time axis similar to the life streams by Gelernter. On 2D surface users may interact and learn about their commonalities including individuals, themes and topics, institutions etc. The 3D view displays the past along a vertical time axis; continuities of activities and relationships are mapped as the length of the cylinders, the intensity of the relationship as their width. Naturally, the visibility of this representation will be fully defined by the user. The data may be accumulated and aggregated via automatic profiling methodologies.

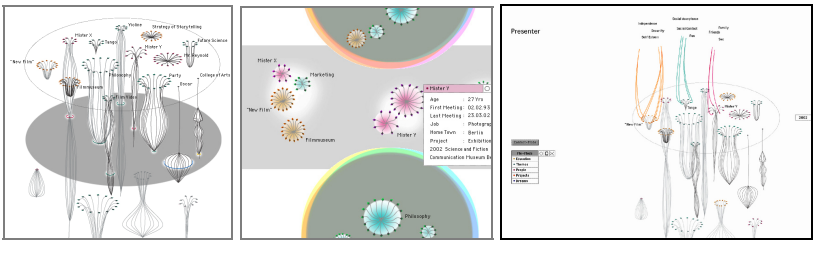

Fig. 3. Presenter: representation of "me"and my past interests in people, topics and projects along the vertical time-axis; in the contact mode, and a visualisation of strategic alignment with personal goals

This system aims to display long periods of time perhaps even a full life span, i.e. an *epic* time dimension. In this sense it is an attempt to connect and structure the mass of single apparently disconnected interactions. The users may also represent privately ambitions and aspirations without sharing them. In this sense the system may be considered an individualized version of a strategy map in the sense of Kaplan and Norton.

Osso.com is an online market place with a visual interface facilitating any kind of deal-making in the internet. Through the interface users can negotiate, conclude contracts and execute transactions online. In a so called pre-negotiation phase users may define goals and projects to be achieved or post specific bids and offers. Users may interact with known or anonymous partners on the platform. Through the visual negotiation platform the parties can then start to negotiate through drag and drop interactions visual elements representing terms, conditions and clauses. If an agreement is reached, it is captured as a visualized contract. Again, having the option to represent aspirations and goals allows representing long term strategies. The outcome of negotiations may be improved according findings in the field of interest based negotiation agents by sharing goals in certain cases. Thereby alternative ways to attain the goals of all involved parties may be discovered and improve the quality of the agreements.

Fig. 4. Osso.com, with Interface for personal preferences, the strategizing zones on both sides of a market field, the visualized contract

The innovative combination of functionalities and the visual interface support all steps from interaction to transaction within *one* system. The commercial potential lies in supporting the various business communities emerging around the subjects they negotiate. We consider all three sketches strategic media, with Presenter the least executional but most epic, Osso the most transactional and perhaps least epic and Big Picture the most genuinely strategic and least epic.

2.2 Outlook and Further Research

The here discussed aspects were inspired from the experimental works introduced above. For a more systematic elaboration of strategic media one could refer to the different approaches to strategizing in the various disciplines ranging from business management, military studies and psychology etc. These theoretical approaches could then inform further heuristics for the design of strategic media in a broader sense. Especially the fields of ambient intelligent systems and transactional systems seem promising domains for the development of strategic media in general.

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