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Future National Atlases – Strategies for Tearing Down the User's Firewall

René Sieber *, Lorenz Hurni

Institute of Cartography and Geoinformation, ETH Zurich, {sieberr|lhurni}@ethz.ch

* Corresponding author

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Abstract:

National atlases have a long tradition; first copies were published in the 19th century (e.g., National Atlas de Finlande in 1899), and they consisted initially only of a series of topographic maps. In the mid 1950ies, the IGU/ICA commission under the lead of Prof. Salitchev propagated a rigid scheme for the map content, consisting of the five categories: Physical environment, Population, Economy, Culture, and Administrative structure (Ormeling 2022).

Large format *printed atlases* were produced, the aim being to demonstrate the power and the beauty of the country. Still today, some national atlases follow basically this structure, sometimes slightly adapted or extended with new categories like Traffic and Ecology. Common to all of these national atlases are well curated atlas maps with a strict display order, and manly addressing the people of the own country, sometimes also used for nation building.

With the emergence of electronic national atlases in the 1990es (e.g., Atlas of Canada, Atlas of Spain, Atlas of Sweden), the concept of interactivity was established in atlas GUIs and maps. The benefit of such an interactive design was achieved by changing the map layers, and through the combination of map layers. Around the year 2000, 3D visualizations became possible (e.g., Atlas of Switzerland). These features in digital atlases allowed users to create never-before-seen maps, and exploration of the map content with the help of free navigation, as well as compilation, analysis and comparison of maps and map elements (Hurni and Sieber 2018, Sieber et al. 2019).

At the same time, the focus of national atlases shifted from the (propagandistic) nation's viewpoint to a more individual socio-cultural perspective, which is determined by the interests and needs of atlas users.

However, with the transition from physical copies (book, CD-ROM, DVD) to publication on the Internet, the visibility of digital national atlases has decreased dramatically. Their use also stagnated because national atlases were not used as an everyday tool, as national and regional geo-browsers – some of which are competitors of an atlas – are today. The plan to install national atlases as an SDI frontend (Köbben 2017) has failed in large part, only the Atlas of the Ukraine is still following this strategy (Putrenko 2022). In addition, there are many internal challenges, inter alia static GUI design, an overload of atlas features, and repetitive visualization (Sieber and Losang 2020).

Now, what could be the solution to solve this dilemma? How can we make national atlases more visible, more attractive and more integrated into daily life?

We can try to solve this essential challenge with two propositions, one of them is basically a top-down approach, the other one a bottom-up approach. The goal of both approaches is to "tear down the firewall between the visualized data and the user", as Ian Muehlenhaus (2022) recently postulated.

In the *Top-down Approach,* we rely on a customized application, specialized in terms of content, tools and topicality. The maps of such an atlas should cover mostly current events and changes. Thus, people are getting interested and hopefully stay tuned. The thematic focus could be on didactics or geo-sciences, for example, presented in a popular way. This enables the visualization of actual data and current issues.

The *Bottom-up Approach* is apparently more user-driven. It aims to open the national atlas concept to a wide audience, trying to integrate them in the atlas building process. Only the basic technology and instalments like base maps, import/export functionality are provided by the atlas makers. The users themselves define the maps by contributing to the map content, or by assigning the atlas authors to produce maps they are interested in. This approach could be very demanding, since a moderator and/or a quality control is needed.

Two further points have to be considered: the way and form of distribution and the fields or key roles of action.

Regarding the *distribution,* a web-based publication is a must, but it can be combined with a printed version (either as a single book or as a series of booklets/ magazines). The most important thing here is: the content of both publication forms must be tailor-made, meaning that the digital version is not only an excerpt of the printed version and vice-versa.

The *key roles of action* can be designated in ascending order according to the complexity of the user's action: 1) viewing/exploring, 2) combining/assembling, 3) storytelling, and 4) gaming. The most promising way will not be to stick on one mode, but on a combination of different key roles according to the content power of the topics.

In our presentation, we try to point out the different possibilities of both the top-down and the bottom-up Approach. We will discuss the pros and cons, and present some exemplary solutions which have the potential to lead national atlases into the future.

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