What Makes us Smarter on a Campus?

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On campuses, we tend to think of ourselves as being among the smartest people. Yet, some of the ways in which we handle resources and opportunities are stuck in academic Stone Age and could use some retooling. Surprisingly, our core business of research and teaching suffers most from arcane resource and information management, characterized by proprietary and largely inaccessible silos of research data and education materials. But universities also offer fantastic interdisciplinary settings for efforts to improve this situation.

The notion of a smart campus, with its roots in smart cities, has been used for a broad range of ideas around the use of technologies in support of campus life and management, often focused on building infrastructure. This specialist meeting takes stock of these ideas and enlarges the spectrum further, by including knowledge infrastructures for research and teaching. One can easily argue that an optimized management of campus resources and support for campus “users” should include research and teaching resources and their use by scientists, students, and administrators. The role of spatial enablement is, it turns out, equally or even more beneficial in these tasks—and has hardly been tapped into so far.

My position at the meeting will be that, since it is tools that make us smart, we need to design and evaluate tools for spatially and semantically enabled exposure and access to scientific contents. Based on an ongoing project at the University of Münster (http://lodum.de) and a new initiative at UCSB’s Center for Spatial Studies (http://spatial.ucsb.edu), I argue that such efforts are best planned and carried out in cooperation with campus libraries. The second main allies are champions from disciplines that understand and promote the benefits of sharing scientific data and linking them spatially and semantically.

In particular, my experience in these two efforts so far suggests thinking about best practices along the following lines:

1. engage librarians and library technologists in discussions on how to spatio-temporally and semantically enable access to library contents;
2. approach campus leadership, jointly with the library, and argue for coordinated efforts in the context of mandates for open access, inter- and transdisciplinary research, cluster funding, scientometrics, e-learning, digitizing resources, improved and novel library services, etc.;
3. build experimental tools and platforms, in cooperation with champion users on campus (consider: genomics, brain research, digital humanities, economics . . . ), to demonstrate the potential of opening up research data and making them spatio-temporally searchable and analyzable.

It helps to set tangible and measurable goals for such efforts and discuss them with users and stakeholders. What benefits should researchers, educators, students, and administrators obtain from them?
As a start, I suggest it should be easy for researchers to:

- publish data and associated analyses, papers, presentations etc.
- find and access data based on place, period, and properties
- analyze the spatial and temporal variation of studied phenomena
- combine data from multiple sources, spatio-temporally and semantically
- analyze distributed data rather than download data for analysis.

Similar lists can easily be drawn up listing benefits for students (think of problem-driven learning), administrators (consider evaluations) and any other actors on campus.

The bottom line argument for such efforts is that campuses, just like cities, compete for residents. Researchers (like myself) tend to choose campuses offering the best environments for a smart use of resources. As experts in spatial thinking and computing, we can propose a range of unique selling points to campus administrators, based on the integrative roles played by space and time.