

Afterword

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In a foreword I wrote for a book¹ about Topic Maps, edited by my friend and colleague Jack Park, I said that we need tools to integrate those conceptual maps with our vast repositories of documents and recorded dialog. My friend Simon Buckingham Shum, in this book, has described my quest for such tools, and I am now realizing that this book brings us to an awareness of the problems associated with our use of the symbols and structures of knowledge that I have long felt to be important. It is very rewarding to see the progress being made by the authors in this book.

I've been reflecting upon the concepts collected and presented in my Unfinished Revolution Colloquium², held at Stanford University early in 2000. They give special reinforcement to me in stating that the information presented in this book will be of great importance to those who would try to understand, to perform, as I am learning from reading here, *sensemaking* on all of our presentations.

For five decades I have been driven by an intuitive certainty that computer supported augmentation could increase humankind's collective problem-solving capabilities to a degree that was (is) greatly unappreciated, and that its explicit pursuit should become one of society's high-priority, "grand challenges".

And as pointed out in my 1962 report^{3,4}, using results from headway on this grand challenge could significantly facilitate progress on all the other grand challenges,⁵ then

¹ Park, Jack, Editor, and Sam Hunting, Technical Editor, 2002. *XML Topic Maps: Creating and Using Topic Maps for the Web*. Boston, MA: Addison-Wesley.

² <http://www.bootstrap.org/colloquium/index.jsp>

³ Engelbart, Douglas C. Augmenting Human Intellect: A Conceptual Framework, SRI roject No. 3578, Summary Report AFOSR-3233, Stanford Research Institute, October 1962,
<http://sloan.stanford.edu/mousesite/EngelbartPapers/B5_F18_ConceptFrameworkInd.html>

⁴ Engelbart, Douglas C. A Conceptual Framework for the Augmentation of Man's Intellect, In P. Howerton and Weeks (Ed), *Vistas in Informaton Handling* (pp. 1-29), London: Spartan Books; Washington, DC.

its pursuit could well deserve to be rated as top priority among the grand-challenge pursuits.

I have come to use the term “Collective IQ” to characterize the focus of this grand challenge. And, specially stimulated by this book, I rate CSAV to be a very important component within the much enhanced capability infrastructures necessary to support the significantly higher Collective IQs needed by our future organizations, institutions, countries – indeed, the whole world.

I have long felt that our collective IQ can be very significantly augmented, and that this will become centrally critical as our world begins to assess the really complex, urgent, and, yes, *wicked*⁵ problems facing it now – and the ever more wicked problems emerging in a future characterized by a scale of change whose degree, rate, and world-wide pervasiveness far exceeds what any human society has ever survived.

I am quite convinced that the ideas, theories and technologies presented here are an important part of the Collective-IQ pursuit. And, vitally important will be the concurrent evolution of what we might call the “social changes” which must occur if schooling systems and widespread knowledge-development and -application processes are to be changed appropriately for effectively harnessing radically new concepts, vocabulary, technologies and skills such as described in these chapters.

Reading this manuscript has left me with some questions and comments. I would like to state them here, perhaps as a way to create stronger links between authors and readers of this book, and my ideas about *facilitated evolution of our improvement infrastructures*.

- Many of the chapters I read here talked about *facilitated* mapping. I feel that the greatest rewards will come when these processes can be applied effectively over the Web where time zones and participant scale will often make directly facilitated meetings impractical. How can these processes be used effectively in *asynchronous*, Web-based settings?
- I feel very strongly that we will need to apply these ideas to a large base of *legacy* documents. To support that, I have proposed a HyperScope⁷ as a design concept for a tool set that would provide the ability to address objects in legacy documents, link them to other objects, very much like the ScholOnto project described here by Simon, and provide the ability to construct views, some of which portray discussions or arguments related to those objects.

⁵ This book will orient you about truly big, wicked problems: 2002 State of the Future, by Jerome C. Glenn and Theodore J. Gordon; Paperback with CD-ROM. 100 pages print and about 2,000 pages CD-ROM; ISBN 0-9657362-9-6 Published: August 2002.

⁶ I am also happy to report that the jargon I am picking up by reading this manuscript is certainly inspiring!

⁷ Engelbart, Douglas C. Draft, OHS Project Plan.
<<http://www.bootstrap.org/augment/BI/2120.html>>

How closely can the ideas presented here relate to the HyperScope way of bringing legacy documents into the conversation?

- Probably the most urgent questions I have relate to two very important issues, which are *scalability*, and *evolubility*. I am not even sure that I know how to ask such questions, but I feel that it is important to mention my concern that any theory or technology that aims to support large-scale, wicked problem solving must be able to scale up and evolve along with the global-scale communities that will need to be served.

And the very scale of change, involving many aspects of the way we work – of working vocabularies, of associated processes and skills, of organizational roles and practices, of the number of interdependent social factors involved, etc. – needs to be factored in with any rational approach to giving a world society the really significant improvements that will be ever-more essential to its survival.

I have come to believe that the answer is to pay special attention to the “improvement infrastructure”⁸ which inevitably will be critically involved in large (very large) communities as they make very-large numbers of adjustments, within their operational infrastructures of capabilities, as they evolve their ways of adapting to the endless emergence of new technologies.

I also believe that no one is capable of predicting (much less designing) the details of how all of these changing elements should best evolve. I believe that the best we could do is foster the most effective improvement infrastructure that we can.

And I further believe that the key operational factor of this most-effective improvement infrastructure will be to effectively facilitate the concurrent evolution of a large number of ever more capable “social organisms,” and to make visible for each of them the best possible view of the evolutionary pathways from which to choose their next “route” adjustments.

What has steered me into a special focus on improving Collective-IQ is the belief that any significant improvement in that collective capability would provide a highly valuable boost to the effectiveness of an appropriately structured improvement infrastructure. And further, that there would be special payoff for society if the earliest improvement communities put special focus on improving those capabilities which would best improve the effectiveness of improvement communities.

In my view of effective improvement communities, it would be critically important that a *Dynamic Knowledge Repository* (DKR) be built and maintained by the participants. And I am sure that argumentation will be an essential part of that effort. I look forward to seeing that come about.

And another thing I look forward to is the effective utilization of these tools and processes in the collective pursuit of important new tools and processes which themselves significantly improve that collective pursuit. I have termed this

⁸ Engelbart, Douglas C. *Toward High-Performance Organizations: A Strategic Role For Groupware*, 1992, Groupware Conference, San Jose, CA, June 19 92 <<http://www.bootstrap.org/augment/AUGMENT/132811.html>>

“bootstrapping,” and feel that this is a very important strategic practice in tackling the very wicked problem of large-scale augmentation of mankind’s Collective IQ.

It is my hope that the next CSAV book will not only tell its readers how this is done, but will itself be an example product of the best CSAV tools and practices as used within this “improvement community” to develop the knowledge and produce an integrated exposition.

Asynchronous communication, 206	Improvement infrastructure, 206-7
Augmenting Human Intellect, 205	Links, 206, 207
Augmenting legacy documents, 206	Problem solving, 207
Bootstrapping, 208	ScholOnto ClaiMaker, 207
Collective IQ, 206, 208	Sense-making, 205
Dynamic Knowledge Repository, 207	Wicked problems, 206, 207, 208
Facilitator, 206	World Wide Web, 206
Improvement community, 208	