

BUILDING A NATIONAL KNOWLEDGE INFRASTRUCTURE

HOW DUTCH PRAGMATISM
NURTURES A 21ST CENTURY ECONOMY

*The COOK Report
On Internet Protocol*






Cover photo: Roos Aldershoff Fotografie

MAASTRICHT, THE NETHERLANDS: Inside the Selexyz bookshop, Maastricht.

Merkx+Girod architects were asked by the Dutch booksellers Selexyz to convert the interior of the former Dominican Church in Maastricht into a modern bookstore. The incredible finished result not only offers a huge range of books but also gives a very different shopping experience!

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Building a National Knowledge Infrastructure

**How Dutch Pragmatism Nurtures
a 21st Century Economy**

Gordon Cook

The COOK Report on Internet Protocol

SURF

Utrecht

The Netherlands

2010

Dedication

To Valerie, Gordon III, Annalee, and Max my family
whose support made this possible

and to Carlota Perez whose magnificent work provided
the missing link and thereby enabled the connection that
provides the foundation for this book

with warm appreciation

Gordon Cook

Preface

The Origin of Knowledge Infrastructure

The internet and broadband debate in the US is too close to the "ground" to enable most observers to understand where the world will be in five years. That reality five years off is the knowledge infrastructure being built in the Netherlands and described in this book. This far-sighted work will be transformative there in the same way that water power and steam power transformed England in the 18th century. This while the rest of the world is arguing over the private share-owner model for what should be public infrastructure. This debate deprives it of the most important advantage of optical technology. When it makes this transition it will be able to begin where the Dutch started in 1997 with the parliamentary motion favoring the building of knowledge infrastructure. Meanwhile the Netherlands has a 13 year lead. As long as the Dutch keep going the rest of the world will never catch up.

Nations that don't understand this will condemn their citizens to be the poorly paid peasants of the underdeveloped world of the 21st century. If the United States doesn't learn these lessons it will be transformed into the world's leading digital back water. Rather like the contrast of 19th century Russia. The intellect and brilliance and economy was all in either Moscow or St Petersburg. Elsewhere was the largest landmass of backward poverty on the planet. The US is still blessed. I am fortunate enough to have some of the better

broadband – without this I can say from first hand experience I could never have accepted the assignment from the Netherlands that turned a double issue of my newsletter into a book being able to communicate with Europe instantaneously 3000 miles and six time zones to the East and with my Editor Sheldon Renan in Oregon 2000 miles and three more times zones to the West in the space of 10 days.

I have been reporting on SURFnet since Bill St. Arnaud introduced me to Kees Neggers at a CANARIE Workshop in Montreal in 1999. My question to Bill was who is doing this right? Who has a philosophy similar to yours? His response – "Kees Neggers" and the in-person introduction was accomplished. I have been reporting on SURFnet ever since. At the end of 2004 and beginning of 2005 I did a long report. In November 2008 I met Kees again at Supercomputing 08 and did a much longer report with him and Cees de Laat because I was finally gaining an appreciation of the very large importance of what they are doing. A year later at Supercomputing 09 we met again, this time also with Bob Hertzberger, Hans Dijkman and Wim Liebrand.

I found the information necessary to answer the questions that came to mind and wove them into the fabric that has become this book. A fabric that was initially intended only for issues of my newsletter.

As a matter of process I fact-checked what I was finding with the folk I interviewed in Portland. They answered my questions, liked my drafts and wanted them to be read by more than just my subscribers and hence asked me to collaborate in turning them into the resulting book.

This book's intent is to lay out a roadmap that explains to readers how the Netherlands came to its national consensus to invest in national knowledge infrastructure. And show what the evolution of the resulting policy process has accomplished. It will conclude by pointing out the changes in perception that must be accomplished in the united states in order to render feasible what Holland has done. Namely treat the fiber and ducts as the national highway system. Those are held in custody for the use of the nation and managed by the government which services the citizens for the benefit of the people and on which private enterprise can build competing higher layer, profit making operations.

Only then can any nation build a competitive, economically valuable knowledge infrastructure. The can become possible in the United States only if competing interests simply understand the policy principle of infrastructure as laid out in the chapters of this book.

Gordon S. Cook, Jr.
Ewing, NJ USA
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Acknowledgments

To **Valerie** my wife of 43 years for her good natured toleration and love for whom I have become and for being a woman of grace and compassion.

To my son **Gordon III** whom I have watched become a hugely talented builder and shaper of environments who has been there in ways beyond comprehension.

To my daughter **Annalee** who has become a warm independent strong loving mother for my grandson "Max". And for Max who must inherit the digital infrastructure described here in order to thrive.

To the **Colonel, Dave Hughes**, West Point Class of 1950 also known as the "cursor cowboy" who has been a good friend since 1980 and who when I finished my policy work at the US Congress Office of Technology Assessment on March 1, 1992 when I asked what the hell will I do now? said without missing a beat - write and publish a newsletter about this internet thing. Dave saw the synergy possible with convergence of my skills and the technology. Standing on the cusp of the 19th year of the **COOK Report** I have never before been so excited about the possibilities.

To **Sheldon Renan** whom I have known now for almost four years. Man of renaissance talents, writer, producer, designer, poet, master story teller and seer. Finder of the rare essence in our sea of chaos. The spirit who has guided me to connect a carpet of events and ideas that want to be related want to be connected and catalysed them into the

following tale. Just as he has been weaving in his own mind for two decades the concept of 'netness' or Renan's law. - Everything wants to be connected and works better when connected. This book is a specific example of the deeper drivers of Renan's Law.

To **Sara Wedeman** one of the most creative, determined, talented women I have ever met who lives in the trans-disciplinary mind set that the world may get to five years from now. Psychologist, econometrician, down loader of the complete databases of the US Census, and practitioner extraordinaire of behavioral economics. Visionary proponent of broadband mapping and Amartya Sen who, if ten years from now there still is an NTIA, Sara will lead the agency to act in the interest of our nation. And an artist who generously devoted more than four full days of design work to get the cover of this book done right.

and

To **Eva Waskell** who in the Spring of 1992 discovered that there was someone at OTA trying to describe this Al Gore research network and invited me to talk at a Tele-strategies conference in April 1992. And whom, as I only found many years later, 25 years ago began what has morphed into the nation wide election integrity movement. No matter what the obstacles Eva has never budged.

All visionaries, all determined, all motivated by the public good. All Bodhisattvas.

What is the COOK Report?

The COOK Report appears 6 times a year with exclusive interviews and commentary on strategic planning for the Internet policy, economics and infrastructure. Subscribers enjoy special member privileges in the private Economics and Architecture of IP Networks mail list. A unique community of interest offering a unique online discussion where industry leaders share knowledge and develop ideas.

Membership is limited to 200 industry visionaries from commercial players such as Google, Cisco, BT, Motorola, Dell, Sprint and others. Other members represent the research and university community, supercomputing centers, network operators, industry analysts and VC communities. Also represented are community network and wireless players, both regulatory and regulatory attorneys, entrepreneurs, public sector, university researchers. 20% of member spaces are reserved for industry executives who work outside the U.S. There is a strong focus on the economic impact of open access fiber, advanced networks and other forms of rich connectivity.

Over the past 18 years special guest interviews have included Vint Cerf, JP Rangaswami, Nico Baken, Hernam Wagter, Carlotta Perez, Chris Locke, (the clue train manifesto interview) John Curran, Simon C Lin, Jerry Michalski, Harvey Newman, Bill St Arnaud and many others. *The COOK Report* has been using the mail list/forum approach to community building for 8 years. Publisher Gordon Cook was formerly served in the Congressional Office of Technology Assessment, and prior to that, the John von Neumann National Supercomputer Center at Princeton. He also has an earned Doctorate in Russian history from Duke University, 1972.

For more information visit
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