

# Chapter 12

## Research Commentary: Increasing the Flexibility of Legacy Systems

**William L. Garrison**

*University of California at Berkeley, USA*

**Barry Wellar**

*University of Ottawa and Wellar Consulting Inc., Canada*

**Ross MacKinnon**

*University of Connecticut, USA*

**William R. Black**

*Indiana University, USA*

**Arthur Getis**

*San Diego State University, USA*

### ABSTRACT

*Flexibility is what people seek when striving to increase or expand economic and social choices, equity, and technological innovations. Flexibility provides the robustness needed to adjust to changes such as those arising from a warmer/colder world, and the actions required when managing threats from and results of social strife, economic downturns, environmental catastrophes, infrastructure disruptions, and war. Flexibility is easy to praise at the level of principle, if allowed that a bit of stability and resistance to change does have merit. At the level of practice or operations the concept is most elusive, and explaining what flexibility means, why it is thwarted, and how it might be obtained is a challenging task. This paper begins by contrasting views of systems and their behaviors. Alternative explanations for behaviors thwarting flexibility are identified. Consequences of inflexible, locked-in development paths are illustrated using examples from transportation and similar systems. Suggestions for increasing flexibility are made after examining system behaviors in dynamic contexts. Academic, government, and industry experiences inform and color interpretations.*

DOI: 10.4018/978-1-4666-1951-7.ch012

## **WELCOME TO THE 2007 ANDERSON DISTINGUISHED LECTURE IN APPLIED GEOGRAPHY**

### **Barry Wellar**

The James L. Anderson Distinguished Medal in Applied Geography was established in 1983 in recognition and memory of the many outstanding contributions that Dr. Anderson made to the field of applied geography. Details about the Anderson Medal, as well as the names and accomplishments of recipients of the Anderson Medal can be viewed at the website of the Applied Geography Specialty Group, Association of American Geographers: <http://agsg.binghamton.edu/>.

In 2001 the Anderson Distinguished Lecture Series was approved by the Board of the Applied Geography Specialty Group (AGSG). The Anderson Lecture is the foremost event of the AGSG at the Annual Meeting of the Association. The Lecture serves as a venue for Anderson Medal recipients to discuss their careers in and contributions to applied geography, and provides an opportunity for attendees at the Annual Meeting to witness the individuals selected to receive the Anderson Medal. Anderson Lecturers to date are Jack Dangermond (2002), Brian Berry (2003), Tom Wilbanks (2004), Barry Wellar (2005), and T. R. Lakshmanan (2006).

The 2007 Anderson Lecture is presented by William L. Garrison, Distinguished Professor Emeritus, from the University of California at Berkeley. Dr. Garrison was awarded the Anderson Medal in 1994. On behalf of the Applied Geography Specialty Group, and present and future transportation geographers of every kind, it is a pleasure and a privilege to welcome William Garrison as the 2007 Anderson Lecturer.

In addition, it is a pleasure and a privilege to welcome Ross MacKinnon, who will introduce Dr. Garrison, and to recognize William Black, Arthur Getis, and Waldo Tobler who accepted the invitation to discuss the text, slides, and remarks

presented by Dr. Garrison. All the supporting participants in the 2007 Anderson Lecture have a longstanding affiliation with William Garrison. Renowned geographers Arthur Getis and Waldo Tobler were graduate students at the University of Washington when Garrison was on faculty at that esteemed hub of transportation studies early in his career. Then, while at Northwestern University and triangulating among offices in Geography, Civil Engineering and the Transportation Center, Garrison taught graduate courses taken by Ross MacKinnon and Barry Wellar, and directed projects for which they were research assistants. Bill Black, who trained at the University of Iowa, has had a professional association with Garrison for many years. In all cases, members of the supporting cast immediately agreed to participate in this session.<sup>1,2</sup>

## **INTRODUCTION TO WILLIAM GARRISON**

### **Ross Mackinnon**

I first learned of William Garrison when I was an undergraduate at the University of British Columbia. As a third year student in 1963, I became excited about what had happened in the Geography Department at the University of Washington, just a couple hours away and 6-7 years before. For my bachelor's thesis, I did a variation of Brian Berry's central place Snohomish County study for a county in Ontario.

But it was the transportation stuff that I believed was my calling. Transportation linked places, caused them to change and the changed places, in turn, gave rise to transportation changes. Garrison, the natural inheritor of Edward Ullman and his regard for geography as spatial interaction, seemed to have the ideal portfolio of interests for me. Moreover, he apparently had so many very accomplished students—Berry, Marble, Tobler, Dacey, Nystuen, Morrill, Getis, Bunge, and others!

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/research-commentary-increasing-flexibility-legacy/68258](http://www.igi-global.com/chapter/research-commentary-increasing-flexibility-legacy/68258)

## Related Content

---

### Geographic Space Ontology, Locus-Object, and Spatial Data Representation Semantic Theory

Sébastien Gadai (2012). *Universal Ontology of Geographic Space: Semantic Enrichment for Spatial Data* (pp. 28-52).

[www.irma-international.org/chapter/geographic-space-ontology-locus-object/63994](http://www.irma-international.org/chapter/geographic-space-ontology-locus-object/63994)

### Spatiotemporal Network Analysis and Visualization

Judith Gelernter and Kathleen M. Carley (2015). *International Journal of Applied Geospatial Research* (pp. 77-97).

[www.irma-international.org/article/spatiotemporal-network-analysis-and-visualization/122363](http://www.irma-international.org/article/spatiotemporal-network-analysis-and-visualization/122363)

### Multicast over Location-Based Services

Péter Hegedűs, Mihály Orosz, Gábor Hosszú and Ferenc Kovács (2013). *Geographic Information Systems: Concepts, Methodologies, Tools, and Applications* (pp. 609-615).

[www.irma-international.org/chapter/multicast-over-location-based-services/70464](http://www.irma-international.org/chapter/multicast-over-location-based-services/70464)

### GIS and Decision-Making in Business: A Literature Review

Esperanza Huerta, Celene Navarrete and Terry Ryan (2005). *Geographic Information Systems in Business* (pp. 20-35).

[www.irma-international.org/chapter/gis-decision-making-business/18861](http://www.irma-international.org/chapter/gis-decision-making-business/18861)

### Threats of Changes in Land-Use and Drivers on Owabi and Barekese Watershed Forests in Ghana

Samuel Ayesu, Victor Rex Barnes and Olivia Agbenyega (2021). *International Journal of Applied Geospatial Research* (pp. 1-18).

[www.irma-international.org/article/threats-of-changes-in-land-use-and-drivers-on-owabi-and-barekese-watershed-forests-in-ghana/279606](http://www.irma-international.org/article/threats-of-changes-in-land-use-and-drivers-on-owabi-and-barekese-watershed-forests-in-ghana/279606)