

MIT-NSF Workshop

Smarter Service Systems

Panel: Ingredients for Successful Academic-Industry Partnerships

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Outline

Challenges faced by academia: How can universities contribute?

The JR EAST/MIT relationship

TWO LINKED CONCEPTS

CRITICAL CONTEMPORARY ISSUES
AND
COMPLEX SOCIOTECHNICAL SYSTEMS

Critical Contemporary Issues (CCI)

- Global Climate Change
- Energy/Environment
- Developing Country Megacities
- Global Economy
- National Security
- Productivity
- Mobility and so forth

Fundamental forces for change in the 21st-century university

The need to contribute to society in new ways: innovation and “critical contemporary issues” (CCIs), both requiring an interdisciplinary approach

Fundamental forces for change in the 21st-century university

“Horizontal” vs. “Vertical”

Integrative vs. Disciplinary

Relevance for Academia

- > We address critical contemporary issues using the Complex Sociotechnical Systems world view
- > This integrated interdisciplinary approach is a pathway for relevance of universities *in a society where relevance is demanded of all institutions*

JR East and MIT: Building a relationship

JR East is a passenger railroad in Japan
Includes Shinkansen and conventional
service

The largest in Japan and by some measure
in the world

Formed as one of seven railroads as part of
the privatization of JNR in 1987 (six
passenger and one national freight
company)

JR East and MIT: Building a relationship

In 1991, four years after the privatization, JR East established a chair at MIT

Their motivation: despite the operating success of JR East, Chairman Yasmashita (recruited from the ship building industry) felt JR East was becoming too insular – “tight island”

He desired a “relationship” with MIT; the chair was not only philanthropy

JR East and MIT: Building a relationship

We have been working on this together for almost 25 years

While Mr. Yamashita wanted a relationship, he was a patient man

“Born small, grow big” was his advice to me

And that proved wise council

The relationship had to be built slowly and carefully

JR East and MIT: Building a relationship

While both JR East and MIT wanted the relationship, it was not easy to develop one

Language was a barrier as was culture and of course distance

The missions of the two organizations are different: an operating railroad and a research university

But we ultimately succeeded

JR East and MIT: Building a relationship

What are the lessons?

- Work on multiple fronts simultaneously
 - Research programs – multi-year, of mutual interest and cooperative in nature: MIT should not simply throw the research results “over the wall”
 - Human resource and partnership development:
 - JR East staff as students in MIT degree programs or as research visitors
 - MIT students as interns at JR East
 - Professorial visits to Japan and senior executive visits to MIT

JR East and MIT: Building a relationship

What are the lessons?

Each partner needs to understand and respect the wants and needs of the other

Selection of research areas: these have to be meaningful to both partners – in this case, interest in *the systems view* is shared; global risk assessment as an example

Build and retain contacts with individuals – senior and junior – over the years. Junior people become senior one fine day

Social contact has value

THANKS FOR YOUR ATTENTION