Putting the “I” in IT Education

A few years ago, I wrote a short article for *Network Computing*, a trade publication read by workaday information technology professionals. The article, “Putting the ‘I’ in IT,” emphasized the perhaps obvious notion that professionals in IT need to pay more attention to the information and related processes. I argued that what business and industry really wanted, and were paying for, was getting the value of the “I” from the “T.” The response from readers was overwhelmingly positive. They instinctively knew that the only reason for the networks they developed and managed was the value-added proposition of the “I”—the information.

A recent *Computer World* article reinforced this need and noted the disconnect between the world of work and academia. The *Computer World* survey of 244 IT professionals found that 75 percent said that academia “isn’t preparing graduates for the IT jobs of today or the next few years.” Did they say this because the graduates weren’t proficient in implementing complex internetworks, ERP, or Web services? No, they said this because the graduates lacked the “soft skills.” The survey, plus interviews with CIOs, “indicated that the shortcomings are in the areas of business skills, troubleshooting skills, interpersonal communication, project management, and systems integration.” Likewise Peter Drucker, in his book *Management Challenges for the 21st Century*, pointed to the failure of graduates in information technology, computer science, and management information systems to fully understand that the value added is in the information, not the technology, and that the fruits of good information for business consist of good business decision-making.

The Syracuse University School of Information Studies, now in its thirtieth year, was the first of its kind in the United States. It is the “Original Information School.” Today, it is part of a growing number of information schools, or “I” schools, at leading institutions throughout the world. These schools are doing research and educating students to put information to work in a multitude of environments. They are committed to expanding human capabilities through information. Their information domain spans the individual, organizations, and society. And even though technology, policy, and management processes are very important tools, they are but means to an end. These schools realize that information professionals must additionally be grounded in the needs of people. Technology, policy, management, and people: these are the four pillars that support both the education endeavors and the research of “I” schools.

“I” schools have degree programs to enable practice in a multitude of environments. Syracuse University offers a B.S. in Information Management and Technology and M.S. programs in Information Management, Telecommunications and Network Management, and Library and Information Science. It also offers a research-based Ph.D. program. Other schools have different names for similar degrees. The University of Washington’s Information School has a B.S. called Informatics, whereas Pittsburgh’s is called Information Science. Michigan has an M.S. in Information with various specialties—in Library and Information Services, Human-Computer Interaction,
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In an effort to do so, eight information
school deans met in September 2003 at a
symposium sponsored by the University of
North Carolina. Their purpose was to
describe the “information school move-
ment.” In addition to the schools already
mentioned, the College of Information
Science and Technology at Drexel Univer-
sity and the Schools of Information Stud-
est at the University of Illinois and Florida
State University participated. The deans’
conclusion? Simply put: “I” schools focus
on information and on people, and the
field has tremendous personal, organiza-
tional, and social impact.

These and other “I” schools are mem-
bers of the IT Deans Group sponsored by
the Computing Research Association
(http://www.cra.org/Activities/itdeans/).
Some of the schools represented in
this group come out of the computer
science tradition but are increasingly
information- and people-oriented. A
worthy example is Georgia Tech’s
eleven-year-old College of Computing.
According to its founding dean, the “ing”
in the college’s name is significant; it im-
plies not just the technology aspect of the
computer but also the importance of the
computer put to work for people. The fact
that this college has strong human-
computer interaction, visualization, and
usability components is indicative of its
social and people trajectory. In addition,
some of the schools in this group have
simply been created anew. In 1998, Penn
State University created the School of
Information Science and Technology with
five founding faculty. The school has
grown considerably since then—its posi-
tion as an “I” school is clear from one of its
B.S. programs in Information Context:
People, Organizations, and Society.

As noted earlier, “I” schools build
their programs around the four pillars of
people, technology, management, and
policy. Typically they offer classes in pro-
gramming, distributed computing, net-
working, information systems, systems
analysis, information-based organiza-
tions, database management systems, in-
formation analysis, and telecommunications
and information policy. Specialty
courses cover areas such as security, proj-
et management, human-computer inter-
action, e-commerce technology, and
Web design. Real-world orientation,
project-based study, teamwork, and
active learning are integral. A capstone
course and an internship or co-op experi-
ence are almost always required. Yet
more than the courses, it is the wholistic
approach that “I” schools bring to infor-
mation problems. In “I” schools, teaching
and research in systems assurance and
cybersecurity, for instance, would focus not
just on the technologies but also on risk
assessment, human factors in secure sys-
tems, and security policies.

Exploration is key to this emerging
field. “I” schools have been increasing
their sponsored-research activities, again
based on the four support pillars. The
common theme of funded research proj-
cets at the Information School of the Uni-
versity of Washington is people—their
needs and how information and technol-
ogy can be harnessed to meet those
needs. Major projects include “Value
Sensitive Design” and “Keeping Found
Things Found,” both funded by the Na-
tional Science Foundation (NSF), and the
“Information Behavior in Everyday Con-
texts” project, funded by the Institute for
Museum and Library Services. The tech-
nology pillar is the focus of the Syracuse
Center for Natural Language Processing
(CNLP), which was recently awarded a
grant from the Department of Homeland
Security to develop a cross-language re-
trieval and translation system between
English and Arabic. The NSF funds many
CNLP studies in intelligent information
retrieval and link extraction. The Center
for Emerging Network Technologies at
Syracuse supports a real-world labora-
tory and a network that simulate a pro-
duction environment. The testing pro-
vides editorial content for Network
Computing magazine, which supports
the lab. Conducting research in the
management-pillar area is Michigan’s
program in Socio-Technical Infrastruc-
ture for Electronic Transactions and its
Center for Research on Electronic Work,
both supported by NSF, as well as its Al-
liance for Community Technology, sup-
ported by the W. K. Kellogg Foundation.
All provide advanced research and devel-
oment and doctoral instruction. Finally,
regarding the policy pillar, the Syracuse
Convergence Center completed a study,
sponsored by the Merkel Foundation, in
the area of Internet domain name resolu-
tion, and it recently received a Ford Foun-
dation award to explore ways in which
the public can participate more effec-
tively in shaping communication and in-
formation policy. Standards and usability
studies for wireless grid technologies re-
ceive support from a number of leading
corporations and the NSF.

Whatever we call these schools—infor-
mation schools, information studies
schools, informatics schools, information
science schools—the “I” word is the oper-
ative term. Information is the key to orga-
nizational sustainability. From this
perspective, content and content man-
agement is king, information retrieval is
queen, and metadata analysis is the ace of
spades. The integration of this domain
with technology, policy, management,
and people works to the benefit of the art
and science of information. By taking this
perspective—by putting the “I” in IT edu-
cation—“I” schools can add value and
serve people, expanding human capabil-
ty through information.

Notes
1. Raymond von Dran, “Putting the ‘I’ in IT,” Network
.networkcomputing.com/1216/1216colvodran
2. Thomas Hoffman, “Job Skills: Preparing Genera-
tion Z,” Computer World, vol. 37, no. 34 (August 25,
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3. Peter F. Drucker, Management
Challenges for the 21st Century

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