

## **Addressing a Decline in IT Students**

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### **The Problem**

It is clear that there is a perception among many young people that technology is not a reliable field to enter in terms of landing suitable employment. How do we know this? Decline in IT programs nationwide are in a period of decline. And, this problem is apparently quite real. CS, SE, and IS enrollments are down drastically, and some educational institutions have talked about either closing IT down or merging it into some other academic discipline.

The reasons for this are many, but prevailing in studies on this issue is the psychological impact from the IT (e.g. dot com”) bubble bursting in 2001.

With the widespread perception from both current and prospective students that off shoring and a weak domestic information technology sector have left few information technology jobs available, students have simply been shifting to other programs such as business and away from information technology programs. This also leads some in the information technology field to begin to have concerns about a coming shortage of information technology workers.[1]

An example is the University of New Hampshire in Durham, New Hampshire. Enrollment in the computer science program has dropped 62 percent in the last five years — from 67 students in the fall of 2000 to an expected fall 2005 enrollment of 25.[2] Other colleges throughout the nation are reporting similar drops in enrollment, so the phenomenon is definitely widespread.

A strong statement to make this point even clearer perhaps can be made.: “The public’s perception of the status of the high-tech economy is that it is still weak and that all the jobs are going overseas. The public has got it wrong,” said Dr. Philip Hatcher, chair of UNH’s Computer Science Department. “The tech bust is over. We’re really going through a slow but steady recovery. And outsourcing hasn’t really had as big an impact on job losses as you think.”[3]

While it’s not as dire as UNH’s situation, J. Stephanie Collins, chair of the Information Technology Department at Southern New Hampshire University in Manchester, said SNHU’s undergraduate program has experienced a decrease in computer-related program enrollment, but the backslide has begun to slow. “We have 45 students in the program now — that’s up slightly from last year,” she said.[4]

Collins and her colleagues in New Hampshire recently completed a survey of colleges and universities nationwide on the subject of declining IT enrollment.

Sixty-six percent of the respondents reported decreasing enrollment in information technology programs. “Students perceived low employment potential due to off shoring. This includes those considering graduate and doctoral programs, not just undergraduate,” said Collins. Her own university cited similar reasons for lackluster undergraduate IT enrollment.

James Isaak, a technology professor at SNHU and board member of New Hampshire’s IEEE chapter — the Institute of Electrical and Electronics Engineers — said students also cited the impression that the major was “too hard”. Another intriguing response was that they perceived technology had little benefit for the common good.

Expectations may play a role as well (how often have we all heard this one?) “We’ve all heard the stories a few years ago of kids graduating high school with programming skills, making \$60,000 and driving a BMW. There’s a sense of entitlement out there, a sense of immediacy,” said Isaak.[5]

And, this perception issue may be inaccurate in another area as well. For example, much of the news publicity about firms off shoring work to places like India, Russia, Thailand and Singapore chiefly applies to large companies. Why? Some speculate that smaller, more dynamic and nimble firms have discovered that outsourcing hasn’t worked for them. They’re finding it is more effective to have one information technology professional down the hall than several in places like Russia or India.

In summary, once you distill many of the studies recently performed on this issue, it appears that prospective and even current information technology students are dealing with an inaccurate assumption, namely that offshore outsourcing is cutting heavily into the availability of computing jobs in the U.S. This is highly inaccurate. For example, hiring in the IT field is rising. As one example of this, there is a “hiring binge” in Silicon Valley[6]. Also, at Google there is “a current target of hiring 10 employees a day.” In addition, recruiting site Dice.com reports that it’s “job postings have doubled since Oct., 2003. Finally, the U.S. Bureau of Labor Statistics says that the only fields growing faster than software engineering are medical assistants and home health aides. In fact, the BLS reports that 8 of the 10 fastest-growing occupations between 2000 and 2010 will be in information technology[7].

So, these students basically suffer from a misperception that large numbers of IT jobs are being outsourced, according to David Patterson, president of the computing society ACM. An ACM-commissioned study[8] finds that, in fact, only 2-3% of IT jobs are being outsourced offshore. Also, that same study found that job growth in the U.S. was increasing faster than that 2-3%, meaning that there is a net gain of IT jobs in the U.S.

And, it should be noted that this phenomenon is not limited to the United States. In Canada, we see the identical problem surfacing. According to a survey by the Computing Research Association, enrollment in information technology declined by 70 per cent over a five-year period between 2000 and 2005.[9]

Even in high school, and despite a high degree of computer proficiency, fewer students are enrolling in information technology programs, said Michael Katchabaw, an assistant professor at the University of Western Ontario's Department of Computer Science, at a recent forum on IT ca-

reers.

The declining number of IT enrollees could be attributed to the dot-com bubble bursting, explained Katchabaw.

"Right after the bubble burst, everybody who used to think that computer science was the place to go to get a job is now very wary of it."

He said the more common question that parents have about information technology studies is whether there will be jobs available for their children when they graduate.

"And the answer is, of course, that there are jobs available, and there are plenty of them," said Katchabaw.[10]

In conclusion, we leave with a telling statement from a noted expert in the field: "We're fighting a terrible perception in computer science that there is some notion that the IT industry, since the [dotcom] bubble burst, is in the doldrums," said Barton Miller, a professor in the [University of Wisconsin-Madison Computer Science Department](#) and chairman of the [Industrial Affiliates Program](#). "But from what I've seen, there is a very vigorous hiring market going on out there." [11]

So, we have concluded that there is indeed a real problem in information technology enrollments nationwide. Do we at Macon State College suffer from this effect? The answer is an unequivocal "Yes!" Our enrollment in our Bachelor of Science degree in Information Technology program has suffered a 14% loss in students since the dot com burst of 2001. This may not seem like much to some whose programs have suffered even greater losses, but we at Macon State College feel a true sense of loss. This loss of students affects us financially, for example, since funding in the University System of Georgia is largely established by number of students and majors. Plus, one of the primary missions of the College is information technology, so this can be seen as a negative for the College in community perception.

After investigation via several means such as interview with local officials as well as informal surveys of students, we believe this decline is due to the following factors:

1. The inaccurate perception by many prospective and current students that the information technology field is no longer a suitable employment destination due to the 2001 dot com burst.
2. Potential saturation of our local market for students. The Middle Georgia/Central Georgia area which the College recruits its students from is approximately 150,000 in population. Due to aggressive recruitment efforts in the past by Macon State College as well as aggressive recruitment efforts from the other local colleges surrounding (Wesleyan College, Mercer University, Fort Valley State University, and two local technical colleges); it is felt by some that we have basically achieved a saturation point in this arena.
3. A possible loss of division leadership due to turnover in the chair position leading the Division of Information Technology.

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4. The dilution of some of our majors due to new major snow being offered by the College as is evidence by the following table (e.g. information Technology students decided to shift to another Bachelor's program now being offered):[12]

Bachelor Programs: Pre-2001	Bachelor Programs: Post 2001
<ul style="list-style-type: none"> <li>• <a href="#">Business &amp; Information Technology</a></li> <li>• <a href="#">Communications &amp; Information Technology</a></li> <li>• <a href="#">Health Information Management</a></li> <li>• <a href="#">Health Services Administration</a></li> <li>• <a href="#">Information Technology Nursing</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Biology</a></li> <li>• <a href="#">Business &amp; Information Technology</a></li> <li>• <a href="#">Communications &amp; Information Technology</a></li> <li>• <a href="#">Education</a></li> <li>• <a href="#">English (starting in Fall 2007)</a></li> <li>• <a href="#">Health Information Management</a></li> <li>• <a href="#">Health Services Administration</a></li> <li>• <a href="#">History (starting in Fall 2007)</a></li> <li>• <a href="#">Information Technology</a></li> <li>• <a href="#">Mathematics</a></li> <li>• <a href="#">Nursing</a></li> <li>• <a href="#">Public Service</a></li> </ul>

### The Solution?

In order to address this decline, the Division of Information Technology is pursuing several efforts as follows:

1. The College has recruited a hard-charging and dynamic Chair who has a superb record in recruiting students in this field as well as solid and highly-respected managerial accomplishments.
2. Efforts have been underway to seek ABET accreditation. ABET accreditation is assurance that a college or university program meets the quality standards established by the profession for which it prepares its students. For example, an accredited engineering program must

meet the quality standards set by the engineering profession. An accredited computer science program must meet the quality standards set by the computing profession.

Why Is ABET Accreditation Important?[13]

- Accreditation helps students and their parents choose quality college programs.
- Accreditation enables employers to recruit graduates they know are well-prepared.
- Accreditation is used by registration, licensure, and certification boards to screen applicants.
- Accreditation gives colleges and universities a structured mechanism to assess, evaluate, and improve the quality of their programs.

3. Internal retention efforts are underway, namely we are attempting to educate our current student base that there are indeed employment opportunities in the information technology arena nearby, contrary to what they may believe. It should be noted that the off shoring efforts being seen in many locations are not reflected by the local employers).

4. Curriculum review is undergoing to assure our curriculum and its individual emphases and even courses are relevant to our local employer base. This employer base primarily consists of information technology positions at Robins Air Force Base, the third largest USAF base, educational institutions nearby (the local k-12school systems), IKON, GEICO as well as others, including smaller mom-and-pop operations.

5. Accelerating out efforts in placing interns out into the local community. We have discovered that many of these interns end up being hire, full-time, at their intern locations once they have graduated with their degree.

6. Cementing more effective partnerships with local businesses including the possible resurrection of a business liaison council.

7. Introduction of an entirely new online Bachelor of Science In Informatino Assurance degree.

## **Conclusion**

Macon State College has experienced a decline in students in our Bachelor of Science in Information Technology program for the identical reason mentioned in the literature, primarily a perception by prospective and current students that employment opportunities no longer exist or are lessened significantly in the information technology field. Through the diligent application of corrective measures, we feel or enrollment will significantly increase and modest increases have already been observed.

## **References**

[1]

<http://www.nh.com/apps/pbcs.dll/article?Date=20050513&Category=BUSINESSREVIEW01&ArtNo=50511031&SectionCat=&Template=printart>

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[2] <http://www.nh.com/apps/pbcs.dll/article?Date=20050513&Category=BUSINESSREVIEW01&ArtNo=50511031&SectionCat=&Template=printart>

[3] <http://www.nh.com/apps/pbcs.dll/article?Date=20050513&Category=BUSINESSREVIEW01&ArtNo=50511031&SectionCat=&Template=printart>

[4] <http://www.nh.com/apps/pbcs.dll/article?Date=20050513&Category=BUSINESSREVIEW01&ArtNo=50511031&SectionCat=&Template=printart>

[5] <http://www.nh.com/apps/pbcs.dll/article?Date=20050513&Category=BUSINESSREVIEW01&ArtNo=50511031&SectionCat=&Template=printart>

[6] Wing and Delaney. (2005) – “*Google’s Growth Helps Ignite a Silicon Valley Hiring Frenzy*,” The Wall Street Journal, Nov. 23, 2005, page A1; Tam Pui-Wing and Kevin J. Delaney

[7] ACM Tech News 2005 – ACM Tech News email, Oct. 10, 2005

[8] ACM Study – “Globalization and Offshoring of Software,” a study conducted by the ACM. That study also served as the basis for reports in the New York Times (Feb. 23, 2006) and other publications.

[9] <http://www.pcworld.ca/news/article/00cd6a8c0a0104080036ef21d5775beb/pg1.htm>

[10] <http://www.pcworld.ca/news/article/00cd6a8c0a0104080036ef21d5775beb/pg1.htm>

[11] <http://wistechnology.com/printarticle.php?id=3387>

[12] [www.maconstate.edu](http://www.maconstate.edu)

[13] [http://www.abet.org/the\\_basics.shtml](http://www.abet.org/the_basics.shtml).