Building the road to an entrepreneurial future

Dr Neelam Soundarajan discusses how a unique programme that he has developed in collaboration with Drs Rajiv Ramnath and Bruce Weide is proving successful in nurturing world-class entrepreneurship in the computing and information technology domain.

You have initiated a pioneering entrepreneurship programme called NEWPATH. Could you briefly explain the project and its main goals?

NEWPATH’s main goal is to prepare students to succeed as IT entrepreneurs. Other key goals of the programme are to help students understand not only the rewards of the entrepreneurial life but also its challenges, such as not knowing whether enough cash will come in to keep the enterprise going for another month, or putting out a technology fire while simultaneously dealing with a marketing opportunity.

What skill set could an IT student expect to gain from taking part in the NEWPATH venture?

Entrepreneurship requires many different abilities and skills, ranging from a good understanding of key technologies to having an intuitive feel for market forces. It is also important to network and develop a keen eye for spotting venture capital. Some of these abilities are developed to some extent in the various computer science and entrepreneurship courses, but the application of skills and their full development really takes place through students’ participation in other activities.

The NEWPATH programme provides students with a variety of training experiences. Could you outline some of the activities?

NEWPATH offers: an entrepreneurship minor programme; a computing-related major programme; internships in start-up companies; participation in training programmes; participation in conferences and other IT- and entrepreneurship-related events; and weekly meetings. These activities help students develop networks that will stand them in good stead in their future careers as IT entrepreneurs. For example, during the current semester, several students are being supported to attend a Startup Weekend being held in Columbus, Ohio.

We also often have local IT entrepreneurs describe their experiences in creating and sustaining their enterprises. The entrepreneurs frequently use these sessions to interest NEWPATH students in joining their enterprises, as interns or full-time after graduation, or, in some cases, as partners.

Finally, perhaps the most important component of the programme has been the weekly meetings of all NEWPATH students, where they discuss their experiences of trying to create new start-ups, seeking funding, working with other entrepreneurial start-ups, and critically assessing the causes of success and failures of various enterprises. These meetings are attended by all NEWPATH students, from freshmen to seniors, and have fundamentally contributed to helping them mature as future IT entrepreneurs.

Are the students assigned a mentor to assist their development?

We do not assign specific mentors to students, but there is plenty of valuable mentoring that takes place, some of it from unexpected sources! We encourage the senior people in the start-ups that hire NEWPATH students as interns to involve them in all aspects of their business, including responding to urgent problems. The people in these enterprises recognise that these young and, often, inexperienced students, have stars in their eyes, and often become their mentors.

Most interestingly though, and primarily thanks to the weekly meetings that bring everyone in NEWPATH together, the more senior students have begun to act as informal mentors for the new students (even if neither side knows it).

Do students gain experience in multiple areas of industry?

It depends on how you define industry. If you define it as the IT industry, the answer is, ‘maybe’. It can happen, for example, via training workshops, because these workshops tend to be about tools and techniques that are currently popular in the IT industry. Similarly, conferences help them keep abreast of developments in the IT industry. But if you define industry as IT entrepreneurship, the answer is, ‘definitely yes’. NEWPATH students are exposed to every aspect of IT entrepreneurship.

Have you witnessed any successes of the scheme thus far?

Most recently, a company called LaunchGram was created by a group of young entrepreneurs, including one from NEWPATH. They achieved quite a bit of success but decided, recently, to call it quits because the business was not growing in the direction they wanted to take it.

A different company, started by another NEWPATH student, just acquired capital of over US $1 million from a venture capitalist. Unfortunately, one result of such success is that students put their academic programmes on the back burner while they pursue their entrepreneurial dreams; but I guess that is the price of success!

I will say NEWPATH has been a wonderful and completely new kind of educational experience for all of us. While it started out with the relatively novel goal of training students to become successful IT entrepreneurs, the way it developed took all of us – faculty members and students – by surprise.
A springboard for self starters

A programme at The Ohio State University has found that entrepreneurship blossoms in an interactive environment where future technology leaders can learn from one another and seize new opportunities.

ENTREPRENEURIAL ACTIVITY IS inextricably connected with innovation and economic growth. The US has a reputation for a high degree of innovation, particularly in terms of computing and IT. It is this spirit of innovation that has contributed to the enormous success of companies such as Facebook, eBay and Google, not only in terms of their bottom lines but also in terms of their societal impact. Technological entrepreneurship, especially in IT, is essential both in order to ensure economic growth and overall development of society as well as to ensure an individual’s success. US state and federal government policies therefore seek to encourage entrepreneurial endeavours through such devices as targeted tax breaks and subsidies and fostering a business environment in which new ideas and companies can thrive.

STIMULATING ENTREPRENEURSHIP

A number of US universities offer courses in entrepreneurship, usually within the framework of a Master’s of Business Administration (MBA) degree. However, since the number of engineering students interested in entrepreneurial endeavours has grown over recent years, Dr Neelam Soundarajan and colleagues at The Ohio State University, supported by a grant from the National Science Foundation, decided to develop a programme designed to nurture world leaders specifically in IT entrepreneurship.

The programme, named NEWPATH, seeks to ensure a vibrant future for the technology sector, not just for the US economy but for the world. It hopes to achieve this goal by enabling students to build new enterprises that either exploit the power of new IT tools and techniques to create new products and services or that use them to provide novel and effective solutions to standard business problems. The NEWPATH team believes that in order to ensure the continued vibrancy and growth of the entrepreneurial economy, it must help develop the entrepreneurial spirit and drive in young computing professionals. The programme achieves this via a number of components: courses in computing and in entrepreneurship; internships in IT startups; student participation in events such as the Startup Weekend where small teams attempt to create a new technology-based enterprise in a matter of two or three days; and most importantly, by means of an integrative component that enables students to learn from each other.

NEWPATH DESIGN

The NEWPATH programme is designed in line with the learner-, knowledge-, assessment- and community-centred ‘How People Learn’ framework. It also takes into account other frameworks of effective education, such as the Community of Enquiry model which develops inter-student connection to foster better conceptual understanding through peer interactions, enabling students to learn from one another’s experiences. In practical terms, the course component of NEWPATH consists of computer science courses taught in the Computer Science and Engineering (CSE) Department of the College of Engineering and entrepreneurship courses taught in the Fisher College of Business. The culminating course is an entrepreneurial practicum in which NEWPATH students team up with MBA students to work on a plan to create a new IT enterprise. The ePracticum involves faculty from the CSE Department and from the Fisher College, as well as entrepreneurs from the central Ohio IT community.

The entrepreneurship courses which form the Entrepreneurship Minor programme consist of five lecture-based courses on innovation and entrepreneurship in modern business, new venture creation, entrepreneurial finance, high-performance ventures and entrepreneurial marketing. The latter three specifically address the typical problems faced by IT start-ups. The computing courses correspond to the requirements of the major in computer science and engineering, electrical and computer engineering or information systems in business administration.

The ePracticum is designed to develop students’ ability to find and develop raw technical ideas into commercially-viable product concepts and put forward a business proposition for a small IT venture. To this end, senior NEWPATH students work in teams with Business School MBA students under the mentorship of executives and affiliates of TechColumbus, a public-private enterprise that provides resources and assistance to people and ventures that depend on technology to achieve their business goals.

In cooperation with TechColumbus, NEWPATH arranges for placements of students in successful local IT start-up companies during the summer at the end of their first two years of study. The goal of the internships is to help students develop a deep appreciation of the startup life, both its challenges and rewards. The programme offers start-ups the incentive of students’ enthusiasm and fresh perspectives, as well as new ideas and solutions to common problems.
The mix of activities, learning, internships and networking opportunities offered by NEWPATH for students interested in IT entrepreneurship is unique and advanced technical strength and 50 per cent of the student’s first three months’ wages. The assignments are made following a carefully designed session in which NEWPATH students, faculty and senior people from local startups learn more about one another.

In addition, NEWPATH provides financial support for students to participate in technology training opportunities; for example, several students are currently being supported to attend a workshop on Ruby on Rails, an open source rapid web development package. Students also received financial assistance to participate in professional conferences and other events, such as the Consumer Electronics Show.

NEWPATH takes on 12 to 15 students each year and because of these low numbers, a weekly seminar is held with students at all levels. The seminars feature presentations from the students themselves, NEWPATH graduates, present and prospective start-up companies and subject matter experts. The topics cover a wide range, from legal issues and technical innovation to competitions for seed funding. Although this activity was originally initiated simply in order to ensure that NEWPATH faculty have regular contact with the students, it has turned out to be the essential component of the programme. It enables students to learn from each other in the true spirit of a community of inquiry. In an extremely cooperative spirit of ‘give and take’, students challenge each other’s understanding of IT technologies, their potential use as the basis of new enterprises, and their application to solve business problems – helping each other mature as IT entrepreneurs.

SUCCESSES AND LESSONS LEARNED
The programme is assessed by comparing NEWPATH students’ knowledge and attitudes towards self-starting with those of students who were interested in the programme but did not participate. NEWPATH students have shown significantly higher scores for criteria such as tolerance of risk and degree of work effort, however, due to the small sample sizes of this study more data needs to be collected to reveal whether their conceptual knowledge of entrepreneurial matters substantially increased. Despite this, the programme has delivered a number of notable successes in terms of real ventures: an idea for a location-based social networking application received seed funding from the 10X programme; a NEWPATH student recently founded a company that provides a universal payments gateway for developers and merchants; and another student created an iPhone application that was featured as ‘App of the Week’ by Time.com and received favourable mention by CNET.com.

NEWPATH AND BEYOND
The mix of activities, learning, internships and networking opportunities offered by NEWPATH for students interested in IT entrepreneurship is unique. The NEWPATH faculty is considering options for extending the programme once the current funding arrangements finish and are confident that the NEWPATH model is robust and portable. Soundarajan points out that, while not every NEWPATH graduate may become an IT entrepreneur, their experience in the programme will stand them in good stead whatever career they choose: “Most will likely choose a career in an IT corporation, but their entrepreneurial thinking will help them in their careers since many large, successful corporations have an entrepreneurial culture.”