

Seven Layer Communications Ltd, South Queensferry, Midlothian, and the School of Computing, Napier University

Associate: Hasanain Golam, a graduate in Mechatronics from the University of Abertay.

This Partnership was funded by DTI.



The achievements made during this partnership not only had enormous benefits for the company, but also potentially represent a significant breakthrough in Internet and network testing technology.

Recycling old software

Embedded computer technology is present in many of today's high level, value added products. Consequently, embedded software represents a key area for future growth. The software currently running each embedded system is designed specifically for a required system. Future savings could be realised if embedded software written for these systems used reusable elements. However, leading industrialists and academics in this field

maintain that the overhead of reusable elements would prove too costly in terms of reduced performance.

This Partnership was formulated to overcome these issues and unlock the latent potential of this small South Queensferry-based company. After proving that the concept was viable, the Associate developed a framework for reusable software components for high-speed network design tools that use embedded software. This capability

enables the software elements to be readily added or deleted as required, representing substantial savings for future projects.

Normally, the testing of high-speed networks does not allow for the extra overhead these reusable elements create. However, the technological progress made in this partnership demonstrates that reusable software elements can be created which minimises this overhead. The achievements made could be of tremendous significance, potentially placing the UK at the forefront of Internet developments and in network testing and validation.

Prior to beginning their Partnership, Seven Layer Communications was reliant on a small clientele for its business. The new capability has unlocked a much broader customer base. As a result, the company forecasts a profit increase of £250K, with further product development into integrated network test tools. The Partnership also led to improvements in Seven Layer's business case management, enabling resourcing and planning to be more easily managed.

Participation in this Partnership by Napier University exposed staff in its School

of Computing to many aspects of the very latest computer technology, particularly in the areas of high-speed networking and embedded software development. This knowledge proved invaluable and now forms part of the department's teaching material. The Project outcomes also facilitated the development of a new research group, Distributed Systems and Mobile Agents, representing a new field of research for the university, which has been identified as a leading strategic technological area in the UK and EU.

As the Associate, Hasanain Golam benefited from increased technical exposure to R&D processes and the enhancement of his project management skills. He also took advantage of the opportunity to gain further academic and professional



qualifications during his Associateship, achieving an MPhil and becoming a member of the Institute of Electrical Engineers. He now works for IG Index plc.

"The project that we have undertaken has given us the opportunity to develop new technologies that allow us to provide better possibilities for our clients."

Ian Smith, Managing Director, Seven Layer Communications Limited.

"Most of the industry is engineering things to run using bespoke systems. What we've done here is proven that you could re-use elements."

Dr. Bill Buchanan, Napier University.

"So in essence what you would have is one platform but a whole selection of tools to choose from and that would open up a new market for the company."

Hasanain Golam, Associate.