

# Engineering Gateways - case study

HEI name:	Northumbria University		
Employer :	Nexus		
Student name:	Mark Whitaker		
<b>1. Individual workbased student</b>			
Please provide: (maximum 500 words)			
<ul style="list-style-type: none"> <li>• What attracted you to the programme?</li> <li>• Name of any academic qualification already held</li> <li>• Summary of the key benefits in undertaking the programme</li> <li>• Explanation of the impact of the programme on your professional aspirations</li> </ul>			
<p>I was attracted to the programme because I am required to demonstrate Masters level learning to achieve Chartered Engineer status. The course at Northumbria University allowed me to work and work towards a Masters level engineering degree. The University also has a good relationship with my employer.</p> <p>Prior to the Professional Engineering MSc I held an upper class second degree in Mechanical Engineering from Newcastle University.</p> <p>The key benefits from undertaking the program are:</p> <ul style="list-style-type: none"> <li>• I can earn money whilst studying for a masters degree</li> <li>• The program helps me get more involved with a variety of projects at work</li> <li>• The programme develops management skills</li> </ul> <p>The programme will be a large boost to my professional aspirations as I am aiming to become a Chartered Engineer as quickly as I can. The program accelerates this because I am able to study to Masters level whilst gaining vital experience to demonstrate my UK-SPEC competencies. I believe the programme will help me achieve my goal of reaching Chartered status quicker.</p> <p>Are you using an electronic recording system provided by your professional engineering institution?      No</p> <p>Can the Case Study be published or is it confidential?                      Published</p>			
<b>2. Employer</b>			
Please provide: (maximum 500 words)			
<ul style="list-style-type: none"> <li>• Overview of type and size of company</li> <li>• Summary of the work-related activity/projects contributing to the MSc Professional Engineering</li> <li>• Statement about how the MSc PE student's work has impacted on the business</li> <li>• An indication of when the benefit / impact occurred, including appropriate indicators</li> </ul>			
<b>Overview of type and size of company</b>			
<p>Nexus employ 620 people and is the Passenger Transport Executive for Tyne and Wear and is a public sector body whose role is to plan, promote and provide public and sustainable transport in the area it serves. Our plans include a £600m project to modernise Metro, providing a step change in comfort and reliability for our passengers. We are creating a network of Superoutes - modern accessible buses running on the main traffic corridors, with extensive priority schemes, speeding journey times into the urban centres of Newcastle and Sunderland. Our task is to improve the quality of life and fortunes of everyone in Tyne and Wear, by creating better transport networks.</p> <ul style="list-style-type: none"> <li>• Tyne and Wear Metro light rail system, used by 40 million passengers a year, a £350 million modernisation programme covering all aspects of the key assets: 60 Stations; 90 Metro Cars; 207 Bridges; 13 Tunnels; 33 Escalators; 34 Lifts; 120km of Track; 160 Points; 560 CCTV Cameras.</li> <li>• The Bus Strategy - a three-year action plan to improve the availability and quality of bus services, working together with commercial bus companies and local authorities, who govern highways.</li> <li>• North East Smart Ticketing Initiative - a £25 million project led by Nexus to introduce smartcard technology to public transport and public services across North East England, in partnership with transport operators and local councils.</li> <li>• Management of nine major bus stations, more than 300 'secured' bus routes, 11 Travel Shops, the Shields Ferry service across the mouth of the Tyne, a network of specialised social inclusion transport including school buses, wheelchair-accessible taxis, and a Call Centre handling 400,000 travel and booking enquiries a year</li> </ul>			

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## Summary of the work-related activity/projects contributing to the MSc Professional Engineering

- Researched escalator lubrication systems, aimed to upgrade and reduce the lubrication component and consumables costs. A major consideration in reducing a global finite resource – oil, by applying it more effectively reduces the organisations total oil usage.
- Implemented the use of Photo Voltaic Cells on 'M' Cubes, [Metro Logo] illuminated by LED lights, allowing positioning where required without major installation work using renewable energy sources to power the lights which are not susceptible to power failures from the grid.
- Researching major cost savings in the use of LED or Induction Lamps in tunnels and column lighting. This energy saving initiative will reduce the time requirement for employees on re-lamping tasks in the tunnels and the columns. This initiative will give us a minimum of 11 years between replacements as well as Health and Safety implication through personnel spending less time on the track and in tunnel on maintenance requirement.

## Statement about how the MSc PE student's work has impacted on the business

Graduates Engineers contribute more and facing a more competitive working environment than in previous years. There is an increased emphasis on empowerment and greater responsibility within early appointments. Graduate now have widespread responsibilities, hence the use of the MSc in supporting them and their training programme.

The Case Study can be published

## 3. University

Please provide: (maximum 500 words)

- Brief overview of how this case study partnership was initiated
- Summary of the key benefits to the academic and the institution
- Details of any specific outputs a. from this partnership  
b. generally of being an Engineering Gateways academic institution

This case study partnership was initiated when Mark Whitaker approached the university to apply for the MSc Professional Engineering programme. Mark was accepted onto the programme based on his academic potential as well as his employer's potential to provide him with appropriate projects to engage with this MSc programme.

Key benefits currently experienced by the academics are detailed procedures and engineering tasks carried out in upgrading the metro stations and incorporating the use of green technology within the stations in Newcastle. The institution has benefitted through being recognised as an educational service provider to a leading transport company in Newcastle.

As Mark is still in his first year of the MSc programme it is too early to detail any specific outputs from this partnership. Northumbria University has greatly benefitted by being an Engineering Gateways academic institution by gaining the recognition of being one of the pioneering universities to develop and promote the innovative work based route of potentially gaining an MSc qualification and CEng registration in one sitting.

Can the Case Study be published or is it confidential? Published if required.

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