

Lancaster China
Catalyst Programme
兰卡斯特中国企业催化项目



GDST 广东省科学技术厅
Department of Science and Technology of Guangdong Province

Lancaster China Catalyst Programme Report

November 2015



www.lancaster.ac.uk/china-catalyst
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Contents

1. Foreword by LCCP	2	15. Case Study - LanHai Career Management	34
2. Foreword by GDST.....	3	16. Case Study - Far UK	38
3. Introduction	4	17. People	42
4. Lancaster China Catalyst Programme .	6	18. Contact Us	44
5. Lancaster University	10		
6. GDST	11		
7. LCCP & GDST Partnership	12		
8. MSc International Innovation	14		
9. LCCP Cycles	16		
10. Timeline of Cycle 1 Activities	18		
11. Market Visits to China	20		
12. Events Organised for UK Companies	24		
13. Chinese Organisations Inbound Visits to the UK	28		
14. GDST Funding Success	32		

Foreword by LCCP

The Lancaster China Catalyst Programme (LCCP) has now been operational for just over a year, and in that time we have taken great strides in facilitating collaborative partnerships between UK and Chinese companies around research and innovation partnerships that will lead to new products and services. To date, we have introduced more than 40 companies to China and the opportunities that exist there through Chinese partners.

The successful operation of LCCP depends on the support of key partners in both the UK and China. In the UK, we receive funding from HEFCE and Lancashire County Council that has allowed us to establish teams in both the UK and China that can provide the support needed to companies as they journey through the programme. In China, our partnership with the Guangdong Provincial Department of Science and Technology (GDST) provides access to a pool of qualified Chinese companies and research organisations willing to engage with UK companies, and provides access to additional funding in China for the collaborative projects. To date, six partnerships will receive RMB 5.5M in funding over the next two years with more applications in the pipeline. We also receive strong support from UKTI, CBBC and the British Chambers of Commerce in Guangzhou who provide expert in-country advice and services to companies as they engage in China.

Alongside LCCP, a new Masters degree in International Innovation (M.Sc.II) has been created in order to develop the next generation of leaders and innovators who are at ease working internationally across different cultures. Students on the M.Sc.II work with the business partnerships facilitated through LCCP and spend time in both the UK and in China working on the collaborative

research and innovation projects. This course attracts students from all over the world, and the first cohort of 28 students has now arrived in China to start 6-month projects with their Chinese partners. At the same time, a second cohort of 30 students has just started their studies and will work with a new group of companies as they also embark on their journey through LCCP.

This report aims to provide you with an overview of the Lancaster China Catalyst Programme and the progress it has made to date. As well as examples of the activities undertaken by companies that are participants in the Programme, we have used a selection of the resulting partnerships as case studies to illustrate the type of engagement and the outcomes expected.

LCCP will run until early 2018 by which time we expect to have facilitated more than 60 collaborative partnerships. We continue to be on the lookout for UK companies with a desire to explore and engage the Chinese market through collaborative partnerships and look forward to developing relationships with new businesses and partners in the year to come.



Dr Nick BURD
Lancaster China Catalyst
Programme Director

Lancaster China
Catalyst Programme
兰卡斯特中国企业催化项目

Lancaster
University

Foreword by GDST

Sino-UK Technology partnerships date back to November 1978 when the two governments signed a collaboration agreement. Since then, China and the UK have been making significant achievements on technology collaboration for more than three decades. Especially in the last couple of years, China and the UK have secured and implemented a number of important technology collaboration projects and programmes, which enrich and deepen the content of the partnerships.

The government of Guangdong Province has always attached great importance to the work of opening up to the outside world. They take the lead to explore channels for international cooperation and strive to increase the level of opening-up. In recent years, the Guangdong Provincial Department of Science and Technology (GDST) has steadily enhanced science and technology exchanges with the outside world and devotes itself to establishing an open innovation system for the region. Our department steadily develops the science and technology cooperation with European countries, the USA and Japan, which are strong in science and technology as well as innovative countries like Israel, and neighbouring countries like the ASEAN members. GDST has seen positive effects from our exploration of cooperative working, establishing a platform for science and technology exchange, building talent teams and accumulating innovation resources. The international cooperation work in our department has grown to be comprehensive, diversified and in-depth, and has delivered a positive contribution to science innovation serving economic and social development.

Through in-depth consultation, GDST and Lancaster University has reached a consensus to develop an extensive cooperation with each other and signed a

Memorandum of Understanding in 2014, aiming to increase the level of partnerships between UK and Chinese technology organisations through collaborative research projects leading to the development and commercialisation of new products and services for global markets. Under the framework of this agreement, GDST and Lancaster University launched the Lancaster China Catalyst Programme to improve the technology level and competitiveness of innovation-oriented companies, promote the joint-training activities and assist the matchmaking of the companies. With the cooperative efforts from other partners, GDST and Lancaster University will help boost business links between Guangdong and UK companies, enhance their mutual understanding, and jointly develop new products, technologies and services for global markets.

We hope that the Lancaster China Catalyst Programme can be an opportunity for us to actively promote the innovation and industrial cooperation between China and UK, facilitate the matchmaking between Chinese and British scientific parks and support the technology development of companies from both sides, especially SMEs. I sincerely wish our cooperation success with substantial achievement.



Dr Jun YANG
Deputy Director-General of
GDST

GDST

广东省科学技术厅
Department of Science and Technology of Guangdong Province

Introduction

To produce a step change in economic growth we need radical new ways of innovating that facilitate the emergence of more high growth companies trading globally. The Lancaster China Catalyst programme (LCCP) exploits the international reach and partnerships of Lancaster University for the benefit of UK small and medium sized enterprises (SMEs), our graduates and the wider economy.

Only 20% of SMEs are exporters, yet globally trading companies have a disproportionate impact on wealth creation. Key barriers to developing new products for global markets are identified by government as; (i) gaining access to business networks, (ii) navigating unfamiliar business environments, (iii) procedural barriers, (iv) capability to understand the competitive environment, and (v) finding confidence, management time and resources to pursue opportunities (BIS Economics Paper No. 5).

LCCP aims to create 60 high value partnerships to overcome these barriers by (i) increasing leadership capacity to unlock their innovation and creative capabilities via a new professional development programme, (ii) providing SMEs with graduate-level students and academic supervision to undertake collaborative R&D, product development and commercialisation projects, and (iii) leveraging the value of our international partners' commercial and academic networks.

The programme focuses on China, where Lancaster University has long-standing partnerships. LCCP is being delivered via partnership between Lancaster, the Department of Science and Technology of Guangdong Province (GDST) and the Chinese Academy of Sciences

(CAS). In the UK, our key partners are UK Trade and Investment, China-Britain Business Council, and Innovate UK.

The £5.1 million Lancaster China Catalyst Programme was created by Lancaster University and is part-funded by the Higher Education Funding Council's Catalyst Fund, the University and Lancashire County Council.



UK business, Chinese organisations, MSc International Innovation students and LCCP team and partners

Lancaster China Catalyst Programme

Overview

The Lancaster China Catalyst Programme is specifically designed to suit business needs for international growth and innovation, and brings UK companies significant return on R&D investment in terms of time and resources. The staged programme of support includes:

- A staged programme of mentoring, development and support to realise R&D and commercialisation partnerships with Chinese organisations
- Access to collaborative partners in China for new product and service development
- Dedicated resources via an experienced UK and China-based support team
- A programme of planned visits to China and Chinese-partner visits to the UK
- A dedicated team of graduate students with science and technology, management and design expertise
- Access together with Chinese partners to significant grant investment from Chinese government funders
- Access to expertise from across Lancaster University and Chinese academic partners to underpin product or service R&D and commercialisation

Leveraging a package of support worth over £70k, the programme requires a £10k contribution from participating companies in staged payments over a 2 year period. Working with the Guangdong Provincial Department of Science and Technology (GDST) in China, the programme has so far worked with 40 UK companies in their engagement with China.



Lyndon Sanders from Far UK talking to potential Chinese partners

Around 40 companies are currently enrolled in the programme.

The Stages of the Programme

Stage 1: Investigate

This first stage of the programme involves an investigation of the Chinese market during a five-day market visit to China that aims to introduce UK companies to potential Chinese partners and generate ideas for collaborative partnerships. This is achieved through:

- Pre-visit briefings and workshops
- Planned meetings and matchmaking activities with pre-qualified partners
- Site visits in China to build a solid understanding of potential business, market and collaborative opportunities

Stage 2: Accelerate

The collaborative partnerships with Chinese counterparts are progressed and 'accelerated' during this stage of the programme with the development of specific proposals and plans for the collaborative R&D projects. Each company receives support from the LCCP team in the UK and China to secure the collaborative partnership, and is achieved through a series of specific activities including:

- An executive programme focusing on innovation and doing business in China
- An inward mission of Chinese companies
- Master classes
- Peer-to-peer networking
- A second market visit to Guangdong

Stage 3: Collaborate

This stage involves the UK companies collaborating with their Chinese partners on delivering their international

collaborative R&D projects. These business-to-business collaborations are supported via:

- A third market visit to Guangdong tailored to suit individual business needs and project requirements
- A dedicated graduate student team drawn from science and technology, management and design disciplines working on projects both in the UK and in Guangdong
- Project supervision from University academic staff

The table below shows the programme schedule and company participation costs for the cycle that will run from April 2016 to July 2018.

STAGE	DURATION	PRICE
1. Investigate	April - September 2016	£2,000
2. Accelerate	October 2016 - February 2017	£3,000
3. Collaborate	April 2017 - July 2018	£5,000

Through partnerships with Chinese organisations in Guangdong, UK Companies will have access to funding from the Guangdong Provincial Department of Science and Technology.

Aims and Objectives

Lancaster China Catalyst Programme started in March 2014 and aims to work with up to 400 SMEs in partnership with Lancaster University, the Department of Science and Technology of Guangdong Province, the Chinese Academy of Sciences, and a growing number of Chinese partners in order to:

1. Overcome identified barriers to new product development for commercial export to China
2. Leverage the value of our international partners' commercial and academic networks for the benefit of UK SMEs
3. Develop the leadership capacity of SMEs to realise their ambitions to trade internationally
4. Provide SMEs with graduate-level resources and academic supervision to undertake collaborative R&D, product development and commercialisation projects in China
5. Combine our expertise as a top UK university in our engagement with SMEs, and our work in China through the UK-China Management Centre, the Confucius Institute and numerous high-value research collaborations with Chinese institutions, to deliver a highly valued programme to SMEs with an ambition to engage the Chinese market
6. Produce a talented and highly employable cohort of graduates with skills and experience in international innovation to underpin SME export ambitions, new product development and international commercialisation
7. Leverage £1.94M in cash matched funding, including £0.32M from the university, £0.72M from SMEs, £0.5M from Lancashire County Council and a minimum of £0.4M from Chinese partners
8. Create 240 new jobs and £40M in Gross Value Added

9. Enable the development of a new research domain for Lancaster, combining our interests in the design of knowledge exchange and enterprise & entrepreneur development in an international context
10. Provide a model of university-business partnership worthy of evaluation for wider adoption across the sector

Funding

The Lancaster China Catalyst Programme is funded with £5.1M over a period of four years from 2014 to 2018. The primary funders are HEFCE with a grant of £3.5M from their Catalyst Fund, with a further £0.5M from Lancashire County Council. Added to this are the expected fees from companies that participate in the Programme (£720k) and contributions from the University (£320k).



Partners

The primary partnership behind the Lancaster China Catalyst Programme is between Lancaster University and the Guangdong Provincial Department of Science and Technology (see pages 10 and 11) based in Guangzhou,

China. Through this partnership, UK companies participating in the Programme have access to qualified businesses in China, and by partnering with a Chinese company, have access to additional funding in China of up to RMB 1M (approximately £100k) through a competitive bid process that provides further support for their research and innovation project.



The Programme is also supported in a variety of ways by a number of other key organisations. Lancaster University has enjoyed a long-standing relationship with the Guangdong Institute of Geochemistry, part of the Chinese Academy of Sciences in China, and is now home of the China-based team for the Programme that is responsible for operations in China. This team is supported by a number of other UK and Chinese government organisations, namely UK Trade and Investment (UKTI) together with the China-Britain Business Council (CBBC), the British Chambers of Commerce in Guangdong, Invest Guangzhou and Invest Shenzhen.



LCCP aims to create 60 high value partnerships and engage up to 80 recent graduates to carry out collaborative R&D, product development and commercialisation activities.

Lancaster University

Lancaster University is situated in the North West of England and is ranked 9th in the UK (Complete University Guide). It has Europe's top Environmental Sciences department and Management School. The University has a total of 2,000 staff and 12,000 students including 1,000 students from China. As small businesses are critical to wealth creation in the UK, the government has already invested more than £100m at the University for its work with small and medium enterprises (SMEs). As a result, the University has successfully established over 5,500 long terms collaborations with regional businesses, including 250 start-up companies, that have created 4,000 new jobs regionally. The University has extensive experience in running projects at National, European and International levels, and complements it's work with SMEs with a number of larger corporate partnerships.

Lancaster University was one of the first UK Universities to engage with Chinese partners in the mid 70's. Since then it has established a Lancaster China Management Centre and a Lancaster Confucius Institute. The University has been collaborating with the Chinese Academy of Sciences (CAS) for over 15 years and created the Environment Innovation & Research Centre with CAS in 2011. The University also received an award equivalent to RMB 30M for a UK-China Science Bridge programme in 2009 that allowed for an exchange of academics and researchers between the two countries.

Lancaster University is one of the first UK Universities with Chinese partners.



A student undertaking research at Lancaster University

Guangdong Provincial Department of Science and Technology

The Guangdong Provincial Department of Science and Technology (GDST) undertakes the establishment of national and provincial guidelines, including policies as well as laws and regulations around science and technology. It also formulates policies and measures of scientific and technical cooperation and exchange, and develops policies and measures to promote knowledge and technology innovation within the province. It works with other departments to establish major scientific and technological infrastructure, such as The Milky Way II Supercomputer facility based in Guangzhou, and Key State Laboratories at Universities and Research Institutes.

Working along side GDST, the Guangdong Science & Technology Exchange Center (STEC) is an organization for international science and technology exchange and cooperation. The mission of STEC is to promote science and technology progress as well as the economic and social development of Guangdong province, and aims to facilitate cooperation between Guangdong province and other countries and regions. Guangdong STEC's principal business includes exchange and cooperation on science & technology projects, personnel training abroad and information gathering, organizing science & technology conferences and exhibitions, and the provision of services for international exhibition and conference projects.



Lancaster China Catalyst Programme team meeting with GDST in Guangzhou in February 2015

www.gdstc.gov.cn/eng/mission.html

LCCP & GDST Partnership

In February 2014, a delegation of officials from Lancaster University, along with the leader of Lancashire County Council, met with GDST in the city of Guangzhou to sign a five-year memorandum of understanding. The agreement outlines aims by both parties to increase the level of partnerships between UK and Chinese technology SMEs through collaborative research projects leading to the development and commercialisation of new products and services for global markets.

At the meeting, Professor Mark E. Smith, Vice-Chancellor of Lancaster University, said: "Lancaster has long-established links with China and we are strongly positioned to help develop greater relationships between businesses in both countries that will deliver mutual economic benefits. This agreement will enable UK SMEs to exploit our long-lasting links and research excellence, giving greater potential for export growth and job creation."

Councillor Jennifer Mein, Leader of Lancashire County Council, said: "We want to help Lancashire businesses to gain new opportunities. This new agreement is an important way for us to make connections between our two countries and encourage new investment into Lancashire. Universities are an important key to producing the next wave of entrepreneurs and business leaders. We're pleased to be working closely with the team from Lancaster, one of this country's leading universities, to share knowledge and open up new business opportunities that will directly benefit Lancashire."

"This agreement will enable UK SMEs to exploit our long-lasting links and research excellence, giving greater potential for export growth and job creation."

Professor Mark E. Smith, Vice-Chancellor of Lancaster University

"We want to help Lancashire businesses to gain new opportunities. This new agreement, which has just been signed, is an important way for us to make connections between our two countries and encourage new investment into Lancashire."

Jennifer Mein, Leader of Lancashire County Council



Left to right – Professor Kevin Jones (Lancaster University); Nicola Owen (Lancaster University); Jenny Mein (Leader of Lancashire County Council); Alistair Morgan (British Consul-General, Guangzhou); Professor Mark E. Smith (Vice-Chancellor of Lancaster University); Yunxian Chen (Vice Governor of Guangdong Province); Director Huang (Department of Science & Technology of Guangdong Province); Jun Luo (Vice Director of Foreign Affairs Office for Guangdong Province); Deputy Director Li Dingqiang (CAS Guangdong Branch); Deputy Director Gong (Department of Science and Technology, Guangdong Province)

MSc International Innovation

Overview of the Programme

The MSc in International Innovation (MSc II) offers a groundbreaking curriculum, blending academic studies, company projects and cultural experiences. Drawing from internationally recognised faculties from across Lancaster University, this unique MSc offers ambitious students from across the world the opportunity to work on high impact collaborative projects with companies both in the UK and China from the Catalyst Programme.

Over 24 months, students on this full-time MSc cover a range of general and specialist subjects chosen from six distinct pathways. These are supplemented by language, cultural and business seminars, resulting in a rich and distinctive learning experience.

The programme is interdisciplinary and involves close collaboration between Lancaster University Management School, the Faculty of Science and Technology and the Faculty of Arts and Social Sciences. This means that students gain a solid foundation across the key complementary areas of design, entrepreneurship and technology while at the same time develop specialist knowledge in one of these areas - a combination that will make these students attractive to potential employers. Students put this knowledge to the test during the programme by working on collaborative projects with SMEs in the UK and in Guangdong Province, China.

On completion of the programme, students are able to use their practical, language and cultural proficiency as a launch pad for their future careers.

*80 industry-focussed 2 year
MScs with a £16,000 bursary
and 6 months in China*

Academic Pathways

Students must choose from one pathway depending on their background:

PATHWAY	BACKGROUND	LED BY
Environmental Science	Environmental science or related disciplines	Lancaster Environment Centre
Engineering	Engineering or related technological disciplines	Engineering Department
Computer Science or Telecommunications	Computer science, physics or mathematics disciplines	School of Computing and Communications
Design	Design or digital and creative disciplines	Lancaster Institute for the Contemporary Arts
Entrepreneurship	Business or management disciplines	IEED Management School

Company Projects in the UK & China

Students work in multi-disciplinary teams on two company projects that come from the collaborative partnerships established between a UK company and a Chinese company set up as part of the Catalyst programme. The student team spends 5 months in the UK working with the UK company, and then travels to Guangdong Province, China, where they spend 6 months working with the Chinese company. During both projects, students receive academic supervision from University staff as well as direction and mentoring from company staff, and allows the students to build upon their academic expertise to deliver collaborative R&D and commercialisation projects to the company partnerships.

Cultural Immersion

Throughout the first year of the course, students undertake studies in Chinese language and culture delivered by the Confucius Institute in order to better prepare them to live and study in China during their second project. Many of the students achieve a basic proficiency qualification in Chinese and have the opportunity to continue their

language studies while in China. Their second project, working with a company for up to six months in China, provides the students with the deep immersion and prolonged experience that will be valuable to them in their future employment in the international work place.

“Completing the MSc International Innovation course and going to China will make me a unique person and mean I stand out from the crowd”

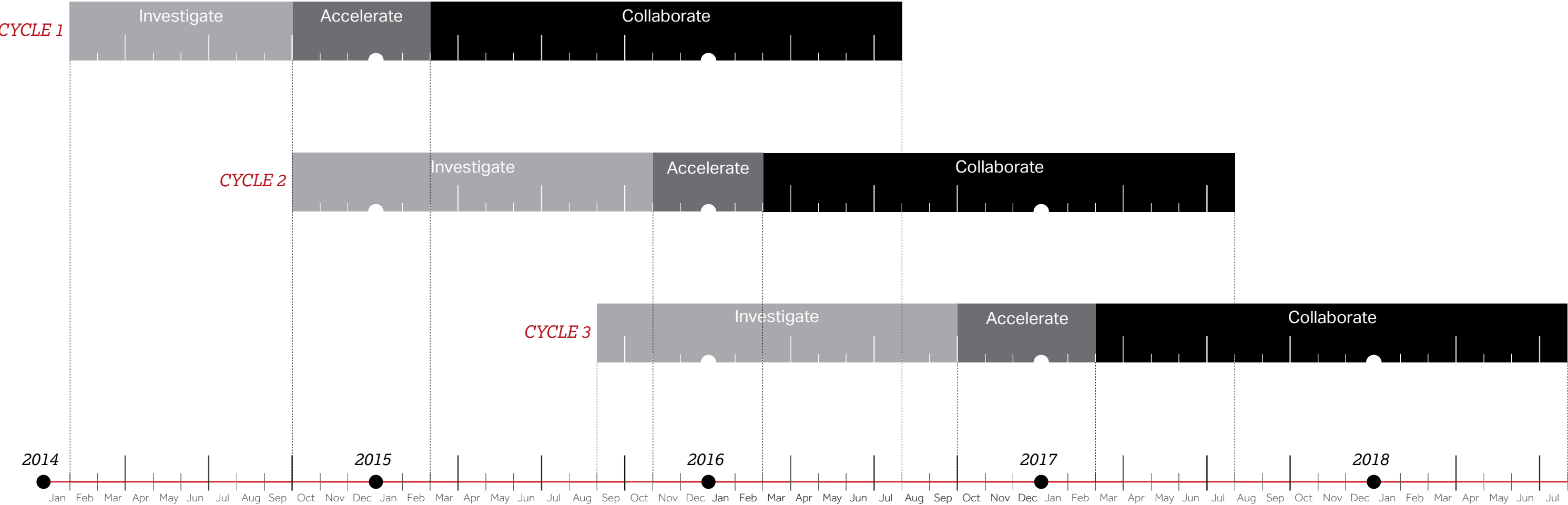
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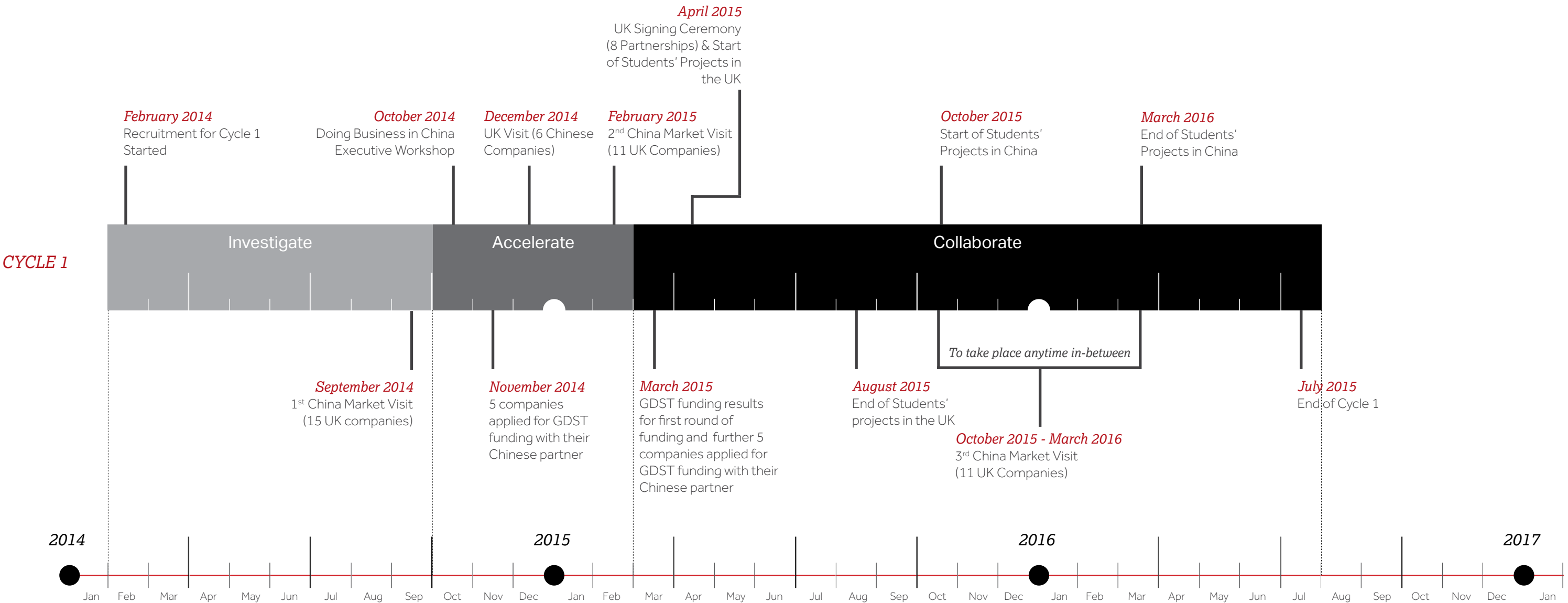
Demopad, Lanhai Careers Management & Xuanyuan Network with MSc II students (Cohort 1)

LCCP Cycles

LCCP is running three Cycles from February 2014 until July 2018 to help UK companies in finding suitable Chinese partners. While every Cycle runs over a two-year period and the activities undertaken in every Cycle is similar, the time of each Cycle is different.



Timeline of Cycle 1 Activities



Market Visits to China

UK Companies 1st Market Visit to China

For companies that participate in the Lancaster China Catalyst Programme, the Programme includes three visits to China, one in each stage of the Programme (see page 7), that are aimed to progressively engage the companies in the Chinese market, find a potential partner, and develop the relationship around a research and innovation project which is then undertaken with the help of a graduate team of students from the MSc II. Most of the engagement takes place in Guangzhou, the capital city of Guangdong Province, one of the most highly developed economic areas in China. The 1st Market Visit is focussed at providing companies with an understanding of the Chinese market and exposure to collaborative opportunities with Chinese businesses.

During the 1st Market Visit in the ‘Investigate’ stage of the Programme, UK companies have the opportunity to meet with our partners in order to understand the market and discuss key topics around doing business in China. The main part of the visit focuses on a conference to which potential Chinese partners are invited, and provides a showcase for UK companies to present their business and aspirations for engaging with China. After the conference, pre-arranged meetings are held between UK companies and their potential Chinese partners as the first step toward identifying and establishing a partnership within the Catalyst Programme. Throughout the week, visits to companies, science and business parks, as well as significant infrastructure projects are arranged in order to provide a perspective on business life in China.

To date, thirty-three companies from the 1st and 2nd Cycles of the Programme have travelled to China in three

groups during their 1st Market Visits during which they have met with more than 100 Chinese companies and organisations. The 1st Market Visits usually take place in May or September.

“The support we have received from Lancaster University has been first class. There is no doubt that the association with the University as part of this programme does give you that extra credibility when going into meetings with potential Chinese partners.”

Dr Ben Herbert, Director of Research and Environment, Stopford Energy and Environment

UK Companies 2nd Market Visit to China

The 2nd Market Visit to China occurs during the second, or ‘Accelerate’, stage of the programme. The aim of this visit is to develop specific proposals and plans for the research and innovation projects by UK companies who have identified a Chinese partner during their 1st Market Visit. It also provides an opportunity to strengthen the



Cycle 1 UK companies visiting Invest Guangzhou as part of their 1st market visit to China programme

relationship with their Chinese partner and discuss how it may be formalised around the collaborative project and the role the student team will play in the project.

During the visit, the companies have time to meet and develop their proposals and agreements, and are supported by the Catalyst team with logistics and translators where needed. Other activities to support this work are provided in the form of seminars on topics such as Intellectual Property protection and the development of grant applications for GDST funding. To date, 11 partnerships have submitted funding proposals to GDST, 6 of which have received funding with a total value of RMB 5.5M (approximately £550k). The 2nd Market Visit usually takes place in January or February.

“The trip was a real eye-opener for us regarding the business opportunities there are for us over in China. We were impressed by the organisation of the visit and also of the quality of the potential partners we met”

Judith Friesl, Marketing Manager - The REACH Centre



Lancaster China Catalyst Programme conference held in Guangzhou in September 2014

UK Companies 3rd Market Visit to China

The 3rd Market Visit to China takes place in the 'Collaborate' stage of the programme during which the collaborative research and innovation project is undertaken with the help of a multi-disciplinary graduate student team from the M.Sc. II. UK Companies can choose when they travel to China based on the needs of their project, but will typically be during the time the student team is in China working with their Chinese partner. The visit allows UK companies to collaborate with their Chinese partners on delivering

the collaborative R&D projects and to oversee the work of the student team. The 3rd Market Visit usually takes place between October and March of the 2nd year of a Cycle.

“I would now like to say a big thanks to all of you for the organisation and facilitation of an excellent first market visit to Guangzhou, which was not only successful from the business point of view, but was also hugely enjoyable from a social perspective, with new contacts and friends made and genuine prospects of building productive long-term relationships. I am looking forward to the next phase.”

Andrew Walker, Executive Director, ADAS



Cycle 2 visit to Huawei



B2B meeting between Lancaster Brewery (Cycle 2 company) and potential Chinese partner

Events Organised for UK Companies

A number of events are arranged for companies during the Lancaster China Catalyst Programme in order to build an understanding and capability of doing business in China, help to establish and maintain a partnership with a Chinese company, and assist with important issues such as contracts, intellectual property and cultural differences in conducting business between the UK and China. The following sections provide a brief overview of the main events that have contributed to this part of the Programme.

Executive Workshop Focusing on Innovation and Doing Business in China

This is a two-day workshop that takes place at the beginning of the 2nd stage (Accelerate) of the Programme, during which UK Companies have an opportunity to hear from and discuss a range of topics with industry experts and academics. Examples of topics that are covered are:

- Innovation in China
- Engagement with China: Understanding motivation and outcomes, challenges and solutions
- High-tech firms in China
- IP Management in China
- Doing Business in Guangdong Province
- The New Landscape of Doing Business in China
- Chinese Economic Development and Foreign Direct Investment Policies
- Drafting R&D Collaboration Agreements



Interactive session with Cycle 1 companies at the Lake District

- EU-China Relations
- Addressing Cultural Differences between UK and China

The workshop usually takes place in October or November at a location in the Lake District.

Throughout the Programme, a number of events are arranged in cooperation with supporting organisations that provide a focus on a specific topic or market segment. The following sections provide a brief description of some of the events that have been delivered.



Speakers at the Opportunities for Environmental Companies in China event in London

Opportunities for Environmental Companies in China - November 2014

In November 2014, LCCP organised an open event in London with the Environmental Industries Commission (EIC) and London Fusion that looked at opportunities for Environmental Companies in China. The event involved talks from Environmental Companies with experience of already operating in China, and the experience of companies participating in LCCP looking to develop new opportunities in China.

Managing Intellectual Property in China - December 2014

Intellectual Property (IP) is a concern that is reported frequently by UK companies as an uncertainty and a risk when they think about expanding to China. As a result, LCCP organised a seminar with the China IPR SME Helpdesk to provide companies with more information and advise them about the best way to protect their IP before entering the Chinese market. The event was held in December 2014 and was free and open for anyone to attend.

UK Companies and Students' Interaction Sessions – January & February 2015

During the Accelerate Stage of the Programme, an important part of the process involves the matching of students to the companies and their partnerships in preparation to undertake the collaborative projects during the 'Collaborate' stage. This starts with companies and students getting to know one another through meetings that allow companies to present their business and discuss the brief for the collaborative project they would like the students to undertake. Students then have an opportunity to respond to the brief by stating the steps they would take to achieve the objectives set by the

companies and provide suggestions to add further value to the project.

The UK company and their Chinese partner are assigned a multi-disciplinary team of three students that could consist of a Science student from one of the disciplines of Environmental Science, Engineering, Computing or Telecommunications, an Entrepreneurship student from the Management School, and a Design student. With the establishment of the student teams and agreement on the project brief, the Programme moves to the next stage where the projects are undertaken both in the UK and in China.

In the first Cycle of the Programme, 29 students participated in the M.Sc. II and were assigned to the 11 collaborative projects established between UK and Chinese companies through the Lancaster China Catalyst Programme.



GDST Funding Guidelines workshop delivered by GDST to Cycle 1 UK companies and their Chinese partners



Finance and IP Seminar at Lancaster University



MSc II students discussing projects with BBOXX

GDST Funding Guidelines Workshop – February 2015

Understanding the application process for GDST funding, particularly by UK companies, is key to maximising the likelihood that funding will be granted. Applications are made on-line in Chinese by the Chinese partner company, so having a clear understanding of the process as well as the details of the collaborative project are essential. In February 2015 and during the 2nd Market Visit for Cycle 1 companies, GDST invited the UK companies along with their Chinese partners to a workshop to explain the process and provide guidelines on how to apply for their next round of funding. This has helped both UK and Chinese companies significantly in preparing them to make applications, with 11 partnerships across Cycle 1 and 2 of the Programme having submitted applications so far, of which 6 have been successful.

Finance and IP Seminar – July 2015

On the 15th of July, LCCP organised an open seminar covering Finance for UK companies wishing to expand to China, R&D Tax Relief and Intellectual Property Management in China. The speakers were from HSBC, Grant Thornton UK LLP and the China IPR SME Helpdesk who gave presentations and answered questions. In particular, the China IPR SME Helpdesk conducted a number of one-on-one sessions with delegates after the seminar in order to provide specific advice and guidance.



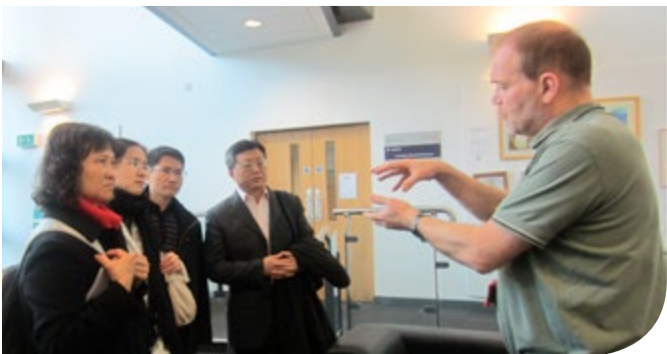
Cohort 1 MSc II students attending presentations given by Cycle 1 UK companies

Chinese Organisations Inbound Visits to the UK

GDST and 6 Chinese Organisations Inbound Visit – December 2014

An essential part of building relationships between UK and Chinese companies is to provide opportunities for the companies to get to know and understand one another. Part of this is done during the Market Visits when UK companies can meet prospective partners in China, and an Inbound Visit to the UK provides a complementary activity for Chinese companies to visit and meet with UK companies in their home environment.

In December 2014, LCCP hosted its first inbound visit. GDST and representatives from 6 Chinese organisations flew from China for a 3-day visit to Lancaster. In those three days, the Chinese organisations had the opportunity to have one-to-one business meeting with the UK companies and visit the Manchester Airport Expansion project as an example of large-scale UK-China cooperation on an infrastructure project. In addition, LCCP along with GDST held an event on Driving UK-China Innovation that was attended by more than 90 people, and supported



GDST visit to Lancaster University in December 2014

by the Vice Consul General of the Chinese Consulate General in Manchester, the Head of Business Growth and Innovation at Lancaster County Council, and the Director of Education, Innovation and Entrepreneurship at the China-Britain Business Council, who gave presentations to the delegates. Some of the topics covered included UK-China Opportunities in Science & Technology, EU-China Relations and Innovation in Guangdong. The event also showcased Chinese organisations interested in forming international partnerships and gave an overview of UK businesses experience in finding and collaborating with a Chinese partner.

UK Signing Ceremony – April 2015

LCCP funded representatives from eight Chinese organisations to visit Lancaster University to attend a signing ceremony of partnership agreements with their UK partners in April 2015. These agreements form the basis of the collaborative projects undertaken by the partnership that will lead to the development of new products and services for global markets.

The following R&D agreements were signed during the ceremony:

ADAS (Wolverhampton) & Wissea Electronic Technology (China)

This project is intended to design and test under realistic conditions, novel water surveillance network mechanisms based on "Internet of Things" techniques and related algorithms, to ensure the optimal health and safety of all naturally occurring water systems.

TE Laboratories (Ireland) & Sustrans (China)

This project will see the development of remote operated water analysis devices, incorporating cloud data storage, helping to monitor water-system quality.

Far UK (Nottingham) & Guangzhou Research Institute of Non-ferrous Metals (China)

This project is to develop the manufacturing technology of ceramic-based friction materials with fibre reinforcement for the braking systems of high-performance cars.

Demopad (Lancaster and Preston) & HDL (China)

This project aims to develop high-end consumer devices that enable home-owners to automate the control of functions such as lighting, heating and entertainment.

LanHai Careers Management (Preston) & Xuanyuan Network (China)

This partnership aims to produce a Chinese version of on-line career development and training platforms.

Croft Filters (Warrington) & SCUT (China)

Croft are looking to identify areas in which it can apply its expertise in the manufacture of filters using additive manufacturing (AM) in either high or low-volume Chinese markets.

Stopford Energy and Environment (Lancaster, Daresbury and Chester) & CN Homeland (China)

This project aims to develop a multi-million pound pilot 'Plasma Gasification Plant' to convert mixed waste to energy, reducing waste going to landfill and cutting air pollution in China.



UK Companies and their Chinese partners signing MoUs



Cycle 1 UK Companies and their Chinese partners networking with Lancaster University staff and MSc II students



Cycle 1 UK Companies and their Chinese partners during the partnership signing ceremony

“That so many partnerships have been set up shows how successful this programme is. At the moment the relations between our two countries have grown closer. Chinese investments and trade with the UK is the highest in Europe. This achievement cannot be done without the joint efforts of

businesses and universities of both countries. I also hope that more enterprises get involved in this programme.”

Haicheng Zhou, Vice Consul-General at the Consulate General of the People's Republic of China in Manchester

GDST Funding Success

In August 2015, the Guangdong Provincial Department of Science and Technology (GDST) announced that 6 LCCP partnerships had secured funding in China to support their collaborative research and innovation projects. The success rate of LCCP projects during this round of funding was twice the average rate of other projects submitted to GDST. The investment from GDST, worth around RMB 5.5 million (approximately £550,000), will be used to supplement the project resources to develop new products and services for global markets.

A selection of the organisations that have received funding are:

LanHai Career Management Ltd

LanHai CML is working with Guangzhou Xuanyuan Network Technology Ltd to adapt an online e-learning system to provide career development and employability learning tools and business skills resources for Chinese universities.

eBusiness UK

Working with the Institute of Software Application Technology at the Guangzhou and Chinese Academy of Sciences, eBusiness UK is developing new video surveillance analysis technology for the 'Smart Home' sector in the UK, EU and global markets.

Demopad

Demopad is working with Chinese partner Joinmax to develop smart lighting systems for homes and businesses.

Genco

Genco is working with SIAT to develop the manufacturing technology that will support the production of cheaper and more efficient solar panels than are currently available.

Far UK

Far-UK Ltd is working with Guangdong General Research Institute for Industrial Technology (GGRIT) to develop the manufacturing technology of ceramic-based friction materials with fibre reinforcement for the braking systems of high-performance cars.

“Naturally we are delighted and grateful for the investment. It will accelerate the development of our advanced home security solution with facial recognition technology, which we plan to bring to market in the first half of 2016.”

Kam Kothia, Managing Director - eBusiness UK



Case Study - LanHai Career Management

Students from Lancaster University's China Catalyst programme work with LanHai Career Management to adapt their internationally renowned on-line e-learning system.

UK Partner: LanHai Career Management Ltd.

LanHai (Mandarin for Blue Ocean) Career Management (LHCML), based in Preston, is spearheading the development of high quality on-line career development and professional skills training resources for use in universities and businesses in China with its UK partner Abintegro. This service is currently used by careers services, professional bodies and other organisations providing career management services in several countries.



Dr Peter Sewell from LanHai Career Management meeting with potential Chinese partners during the 1st Market Visit to China in September 2014

Chinese Partner Xuanyuan Industrial Development Co., Ltd.

Xuanyuan is a leading IT solutions provider to the university, telecom, finance, government and hospital sectors in China and has more than 1000 clients across the South China region.

Expertise Sought

- Web/smartphone interface development for Chinese clients
- Data mining and management
- On-line learning environments
- Translation/interpretation
- Business development (sales/marketing/financial management)

The Solution

MSc International Innovation students are working with LanHai and their Chinese partner, Xuanyuan Industrial Development Co Ltd based in Guangzhou, China, to adapt the Lanhai on-line e-learning system, which provides career development learning tools and business skills resources for universities and businesses, to the Chinese market. The system has already been adapted for use in 10 different countries including a version in Arabic for Saudi Arabia. The students involved in this project researched the differences between the markets for on-line career management resources in China and the UK – specifically how the markets operate, how users



LanHai Career Management and Xuanyuan signing their Memorandum of Understanding in Guangzhou

pay for these services and how the markets differ due to the scale of the country and the nature of the Chinese economy. The project poses technical IT challenges as the translated and adapted resources must operate from UK based servers, but link in with and function effectively with data mining and job vacancy information in China. It is vital that the design of the interface remains compatible with the core of the UK based system, but allows it to operate effectively in the Chinese market in a way that out performs the competition but also appears in China to be

a locally delivered service. The user interface also needs to function effectively on laptops, tablets and smartphones.



Xuanyuan Network representative during the inbound visit in April 2015 at Lancaster University

“Through the project cooperation, we learn from the internationally advanced technology and expertise, enhance the company’s innovation ability, and broaden it’s vision”

Chen Tong, Chairman of Guangdong Xuanyuan Network

Impact

The company is anticipating a considerable increase in turnover after year one, partly because they are starting from a low base point, but also because of the high scalability of both projects. The project will also result in Chinese versions of smartphone apps for the Abintegro platform, an online Chinese language professional development training package, and a Chinese online career development learning platform.

Benefits to the company

- Development of new commercial products
- Anticipated increase in turnover after year one

Benefits to society

- Chinese versions of smartphone apps
- Online Chinese language professional development training package
- Chinese online career development learning platform

Future Plans

LanHai Career Management Ltd and Xuanyuan have secured GDST funding for their project with a value of RMB 1 million (around £100,000) that will help to allow further development of the platform in China for targeted markets.



LanHai Career Management and Xuanyuan Network having dinner at a local pub in Lancaster in April 2015

“This cooperative business partnership which can make a real impact on student and graduate employability challenges in China would be unlikely to have been possible without the support of the China catalyst Programme.”

Dr Peter Sewell, Managing Director - LanHai Career Management

Case Study - Far UK

Far UK, based in Nottingham and Chinese partner Guangdong General Research Institute for Industrial Technology are developing manufacturing technology for ceramic-based friction materials with fibre reinforcement to be used in the braking systems of high-performance cars.

UK Partner: Far UK Ltd.

Far UK, based in Nottingham, bring together the combined industry expertise of engineering, manufacturing and materials to create a design team with future manufacturing capabilities and training packages for those organisations with a desire to enter the composites industry either directly or in partnership with their existing customers and suppliers.

Chinese Partner: Guangzhou Research Institute of Non-Ferrous Metals (GZRINM)

Founded in 1971, the Guangzhou Research Institute of Non-ferrous Metals (GZRINM) is the largest comprehensive institute engaging in research and development of new materials in Southern China. Key areas of research and development include the development and utilization of mineral resources, material surface engineering technology, rare scattered metal extraction metallurgy, powder metallurgy materials, new welding materials, rare earth materials, wear-resistant alloy materials, material analysis and testing technology, cane sugar and bio energy technology.

The Challenge

The partners want to develop manufacturing technology for ceramic-based friction materials with fibre reinforcement for the braking systems of high-performance cars with improved braking at high speeds.

“With Lancaster China Catalyst Programme, Far UK has been able to approach the Chinese market with confidence. We now have research and development work ongoing in China and a broadening network of commercial contacts. We have already conducted some commercial work in China and we believe we will shortly sign additional contacts. The impact of the programme has been to revolutionise our opinions of, approach to and success in China.”

Lyndon Sanders, Director & General Manager - Far UK



Lyndon Sanders from Far UK answering the Chinese audience questions during the conference organised in Guangzhou in September 2014

Expertise Sought

- Advanced manufacturing
- Experience of automotive industry

The Solution

Far UK and GZRINM are researching and developing the design and manufacture of a new automotive brake system based on ceramic materials. The brake system will

be used in a new electric car that will feature an electric motor, battery and drive train from other Chinese partners. Several technologies are being acquired and applied to the preparation of the brake materials, which the companies have designed to work under high speeds and high load working conditions. The partners also plan to provide the products and technical services to the global automotive industry. The companies plan to include component design and optimization, process optimisation, manufacturing of test samples and performance evaluation in the project.

Potential Impact

The partners hope the project will result in the development of a full design for a vehicle that can be assembled locally in factories across China using components and assemblies sourced from within China together with a carbon-fibre chassis supplied by Far UK. It is estimated that each factory in China producing the car could generate £5m a year of additional turnover for Far UK who have a target of eventually establishing 10 manufacturing plants in China and a corresponding increase in workforce at the Far UK facility in Nottingham.

Benefits to the Company

- Potential to create 10 manufacturing plants in China through partners
- Potential future turnover increase of £50m per year

Benefits to the University

- Fostered collaboration between UK and Chinese contacts which provide experience for student

“The best thing I did for the business was to ensure the best possible experience for the final vehicle user, which will hopefully result in Far UK suspensions being purchased more often and the chassis they produce being more tempting for automotive manufacturers in the future.”

Joseph Lincoln, MSc International Innovation

Benefits to Society

- Potential creation of 60 jobs at Far UK

Future Plans

The Far UK/GZRINM partnership has secured funding for their project in China from GDST with a value of RMB 1 million (around £100,000) in order to further develop and commercialise the new brake system.



Far UK and Guangzhou Research Institute of Non-Ferrous Metals (GZRINM) during the MoU signing ceremony at Lancaster University in April 2015

People

Lancaster China Catalyst Programme



Dr Nick BURD
Programme Director

UK TEAM



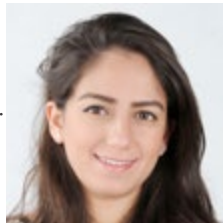
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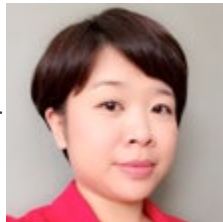
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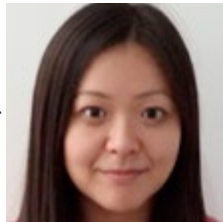
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