

# Value Chain Analysis of the KITE (Knowledge, Innovation, Technology Exchange) Project: Small and Medium Sized Enterprise (SME) Food Sector Case Studies in Wales, UK.

Elizabeth C. Redmond\*, Sharon Mayho, Darren Mumford and David C. Lloyd

Zero2Five<sup>o</sup> Food Industry Centre (FIC), Cardiff Metropolitan University, Western Avenue, Cardiff, CF5 2YB, UK.

\*Corresponding author: [eredmond@cardiffmet.ac.uk](mailto:eredmond@cardiffmet.ac.uk)

## INTRODUCTION.

The KITE Project was implemented in response to the reported decline of food technologists in Wales (UK) and the critical need for food-sector SMEs to meet technical demands required for innovation and sustainability. The project was based on a collaborative partnership between an industrial (SME) partner, a knowledge-based partner and an affiliate (graduate/individual with industrial-experience) and aimed to increase food science/technology knowledge and improve technical compliance and business performance (Redmond, 2013).

The concept of the value chain is based on a process view of organisations, whereby businesses such as food sector SMEs are cumulatively perceived as a system, made up of subsystems, each with inputs, transformation processes and outputs; such subsystems involve the acquisition and consumption of resources - money, labour, materials, equipment, buildings, land, administration and management (Porter, 1985). These aspects are fundamental to competitive strength in the market place and combining activities to create value for the ultimate customer (Svensson, 2003). This concept corresponds with the directive of the KITE feasibility project which was to 'enable SME commercial gain' by improving Welsh partner SME's business operation, increasing innovation to include new product development, and increasing knowledge and skills for the partners, food scientists and technologists (Redmond, 2013).

## AIMS.

The aims of this study included examination of KITE SME partners' core competencies and analysis of cumulative/individual project impact using Porters (1985) value chain structure.

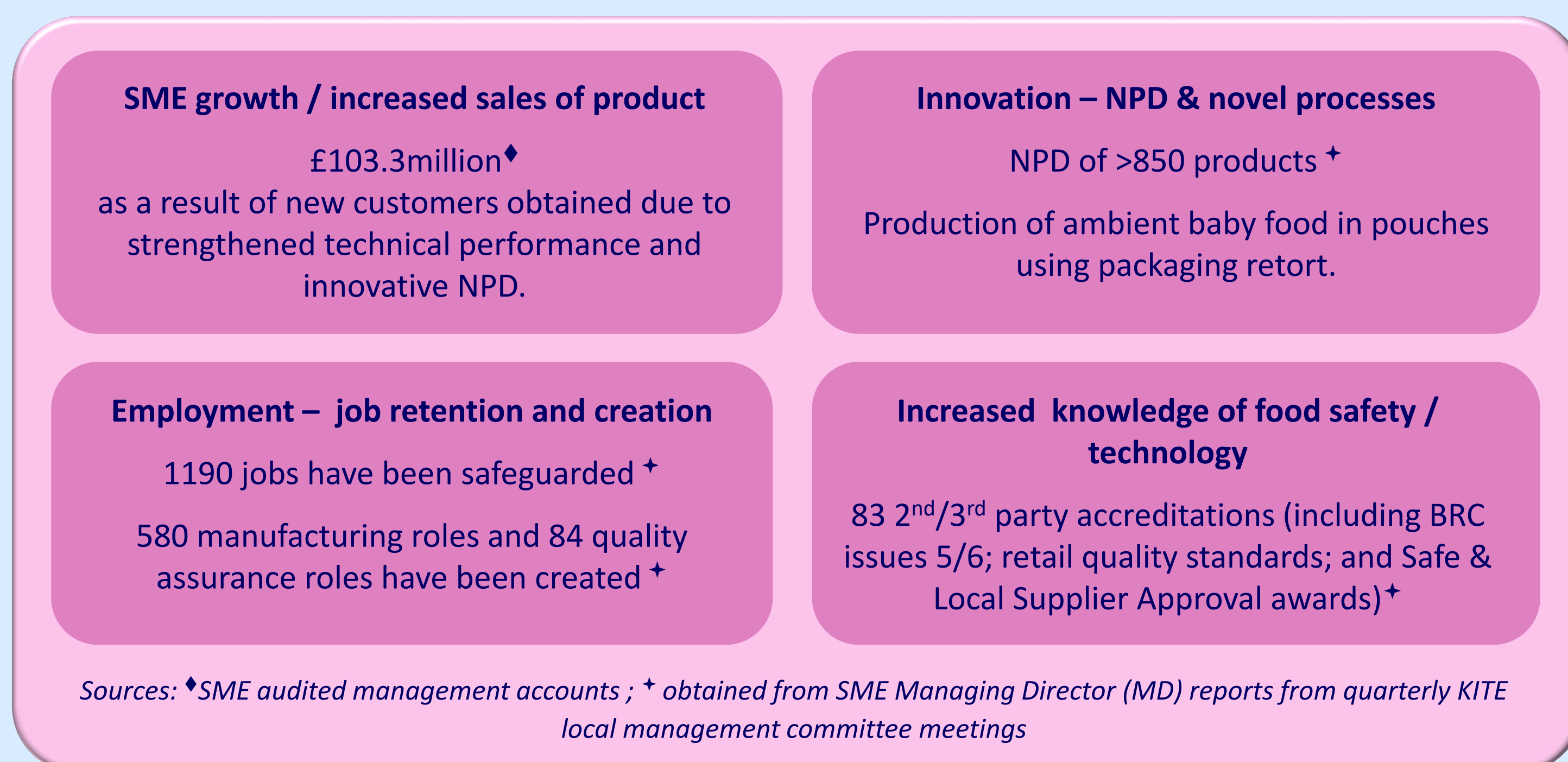
## METHODS.

- An output / outcome evaluation determined KITE project primary and secondary impacts.
- Quantitative/qualitative SME partner data, structured evaluation of primary activities (logistics, operations, marketing/sales and servicing, including food technology/safety education) and support activities (SME infrastructure, training/development, technical development and procurement).
- Key outputs resulting from >90 KITE programmes in 43 SME partners, predominantly in bakery, fruit and vegetable, confectionary, dairy and raw meat sectors, were evaluated and analysed. Overall, 13 KITE SME partner case studies were developed.

## RESULTS.

- Cumulatively, during KITE Project implementation (2008-2015) significant outputs have been delivered (Figure 1). Critical technical support provided through KITE has considerably benefited the Welsh food sector SMEs.
- Outputs delivered significantly exceeded project targets and met Welsh Government needs planned for the food and drink, manufacturing and processing industry 2014-2020.

Figure 1. KITE Project Key Primary Outputs (2008-2015).



- Analyses of the case study SME value chains highlighted that the KITE Project has had a direct impact on the core competencies of the organisations (see Figure 2).

Figure 2. % Value chain primary and support activities evidenced in KITE SME partners (n=13 SME case studies)

% of SME cases undertaking PRIMARY activities			% of SME cases undertaking SUPPORT activities		
Inbound logistics	Supply chain efficiencies – local suppliers	38.5%	Infrastructure	Investment	92.3% <sup>♦</sup>
				Other accreditations	6.7%
Operations	New equipment	61.5%	Human resources	Additional employees	100% <sup>†</sup>
	New premises	30.8%		Work force development	76.9%
	Waste reduction	38.5%		Staff restructure	6.7%
	Process / production flow	30.8%			
Outbound logistics	-	46.7%	Technology development	New product development	76.9% <sup>*</sup>
Marketing and sales	Promotions/campaigns/adverts/nominations	38.5%		Information Technology	38.5%
	New supermarket supply	53.8%	Procurement	New supplier sourcing	30.8%
	Export	15.4%			
	Other new supply	69.2%			
	Increased sales	100% <sup>*</sup>			
Service	-	15.4%			

Key:  
<sup>\*</sup> 92.3% >£1million & 30.8% >£10million increased sales  
<sup>♦</sup> total investment >£10million  
<sup>†</sup> 855 additional employees  
<sup>\*</sup> 302 new products developed

Synergies observed between SME secondary and primary activities were evidenced primarily in marketing/sales. In order for this to be attained the organisations combined human resource support activity and employment of additional employees, with three-quarters of case study SMEs initiating work force development schemes.

SMEs achieved a competitive advantage through effectiveness across value chains as well as with regards to logistical and operational efficiencies where interrelationships between the support and primary activities have been identified in case study analyses.

## CONCLUSIONS.

- The KITE feasibility Project has facilitated medium and long-term strategic development, technical innovation and maintenance/improvement in food production processes in food manufacturing/processing SMEs in Wales, UK.
- SMEs benefited from improved value chains particularly related to operational activities. Cumulatively, KITE is a significant tool to facilitate improved food safety/technical performance with potential for international application.

## REFERENCES.

- Porter, M.E. (1985) Competitive Advantage: Creating and Sustaining Superior Performance. Simon and Schuster. New York.  
 Redmond, E.C. (2013) KITE Evaluation Report. Independent report for the WG and EU.  
 Svensson, G. (2003) Consumer driven and Bi-directional value chain diffusion models. European Business, 15(6), p390–400.