How SMEs can gain competitive advantage through technology

SME/HPC Project

Moldova Conference 6th and 7th October 2020

Prof. Bill O'Gorman
Lead Partner SME/HPC Project

How Information Gives You Competitive Advantage

▶ The information revolution is sweeping through our economy. No company can escape its effects. Dramatic reductions in the cost of obtaining, processing, and transmitting information are changing the way we do business.

▶ Most general managers know that the revolution is under way, and few dispute its importance. As more and more of their time and investment capital is absorbed in information technology and its effects……….

▶ As they see their rivals use information for competitive advantage, [CEOs] recognise the need to become directly involved in the management of the new technology. In the face of rapid change………

How Information Gives You Competitive Advantage

▶ …………**the challenges of the information revolution.**

❖ How will advances in information technology affect competition and the sources of competitive advantage?

❖ What strategies should a company pursue to exploit the technology?

❖ What are the implications of actions that competitors may already have taken?

❖ Of the many opportunities for investment in information technology, which are the most urgent?

How Information Gives You Competitive Advantage

▶ ……………managers must first understand that information technology is <u>more than just computers</u>. Today, information technology must be conceived of broadly to encompass the <u>information that businesses create and use as well as a wide spectrum of increasingly convergent and linked technologies that process the information</u>. In addition to computers, then, data recognition equipment, communications technologies, factory automation, and other hardware and services are involved.

How Information Gives You Competitive Advantage

- **The information revolution is affecting competition in three vital ways:**

  - ❖ It changes industry structure and, in so doing, alters the rules of competition.

  - ❖ It creates competitive advantage by giving companies new ways to outperform their rivals.

  - ❖ It spawns whole new businesses, often from within a company's existing operations.

How Information Gives You Competitive Advantage

▶ The information on the previous four slides apply as much today, <u>or even more so,</u> than they did when they were first printed.

When ????

How Information Gives You Competitive Advantage

▶ The information is based on a Harvard Business Review (HBR) article by by Michael E. Porter and Victor E. Millar printed in the July 1985 Issue

Accessible on-line at: https://hbr.org/1985/07/how-information-gives-you-competitive-advantage#:~:text=for%20its%20consequences.-,Creating%20competitive%20advantage,Lowering%20cost.

The advanced world of Information Technology in 2020

- ▶ The ways of capturing data are endless – pervasive

- ▶ So much data most micro-enterprise and SME owner/managers are "caught in the headlights"

- ▶ Just like in the 1990s when the adoption and assimilation of IT among micro-enterprises and SMEs was very low, so it is in 2020 with High Performance Computing (HPC)

- ▶ There is nothing like a good crisis to being about social change and innovation – COVID-19

Barriers to HPC adoption by SMEs

Owners lack of awareness of HPC	Lack of available material about HPC
Lack of understanding as to the benefits of HPC	Lack of time to understand and implement HPC
Lack of commitment from senior management	High cost of investment to train staff to use HPC
High cost of investment to use HPC	Culture barriers
Lack of relevant infrastructure	No knowledge of where to get HPC information
Lack of technical skills within the organisation	The perception that HPC is not relevant for SMEs
HPC is for big business with big data	Not knowing where/how to start
Cost and RoI too high/long	Prohibitive costs to use HPC
Resistance to change to new technology	A mistrust in using off site on-line systems
Few cases studies detailing the relevance and benefits of HPC to micro-enterprises and SMEs	
No good guidelines on how to use, benefit from and effectively access HPC	

The SME/HPC Project

- ➤ SME/HPC took a pioneering step towards improving the awareness about the innovative potential of HPC by SMEs by:

  - ➤ Co-designing tailor-made courses delivering a coherent set of competences required for the application of HPC in SME and micro-enterprise contexts.

  - ➤ Based on an assessment of the required HPC competences for raising HPC awareness and building HPC skills in HEIs and SMEs

  - ➤ Three pilot regions (South East Slovenia, South East Ireland and Bucharest-Ilfov Romania) piloted the SME/HPC methodologies of HEI-Business engagement and the HPC education material for both HEIs and SMEs.

The SME/HPC Project

▶ ERASMUS+ Knowledge Alliance co-funded project

▶ 8 Partners from 6 countries

Partner	Type Organisation	Country
Waterford Institute of Technology	University	Ireland
Northumbria University Newcastle	University	United Kingdom
Faculty of Information Systems	University	Slovenia
Ambrosys	SME	Germany
Arctur	SME	Slovenia
Vega Press	SME	United Kingdom
ANCD	National Public Body	Moldova
UEFISCDI	National Public Body	Romania

Outputs:

▶ HPC self-study training material for HEI staff

▶ HPC training material for SMEs

▶ Region-specific Action Guidelines for HPC

▶ HPC for Dummies

▶ HPC Policy Lab

▶ SME/HPC "Summer School" programme

All outputs are available on:

Enabling SMEs to gain **competitive advantage** from the use of HPC

www.smehpc.eu

Thank you