

Improving Management Control and Business Performance through Knowledge Transfer Partnerships

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# Abstract

Many companies have made significant investment in enterprise-wide information systems in an attempt to work faster and smarter. However, large corporate systems such as ERP, CRM and SCM produce large amounts of data but often little information. Companies are beginning to explore the potential of new products and technologies, which can exploit their corporate databases to improve management control and assess the impact of key business decisions.

This article examines how the knowledge transfer partnership (KTP) scheme has allowed two SMEs to focus on extracting key performance information in certain areas of their business, and how a third company has been helped by the scheme to develop new software products in this field. It reviews both the development and application of these tools, as well as the value of the KTP scheme as a vehicle for innovation and change.

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# Introduction

Companies used different management control systems for decades to measure performance and supplement available financial information. Company performance can be comprehensively measured at all levels across the organisation, and this is often achieved by implementing operational measures based upon Key Performance Indicators (KPIs). There are many different performance indicators that can provide useful information about a company’s performance, but it is important to identify those indicators that provide the key information, which will measure progress against the company’s overall business strategy. These Key Performance Indicators should be the measures adopted to determine performance levels and should cascade through the organization in order to ensure consistent alignment with business goals. The

Knowledge Transfer Partnership scheme is a UK government initiative, which is aimed at improving the bottom-line performance of UK companies, particularly SMEs. This article examines three case studies of how KTP projects have been used to advance management control and business performance through the use of appropriate management information systems. Two of these case studies (Beacons Business Interiors and TPG DisableAids) focus on the *introduction* of such systems and their impact on business performance. The third case study (SofTools) is a company that *develops and delivers* such control and measurement systems. Collectively, they provide a snapshot of how information systems and tools are used to advance this aspect of business management.

# The Knowledge Transfer Partnership Scheme

The Knowledge Transfer Partnership (KTP) scheme has often been informally described as ‘the best kept secret in higher education’, but it is now delivering major business benefits for companies working with local universities across the UK. The scheme is recognised as a leading component of the ‘third sector’ (knowledge transfer) of activity in higher education, along with teaching and research activities (Ozga and Jones, 2006). It is based on the idea of alliance between an organization and a university with the objective of drawing on and enhancing each other’s expertise, knowledge and skills. (Wynn & Jones, 2006). Moreover, it revolves around the development of a project, which operates as a basis for learning and the knowledge transfer between the main partners. The project usually centres on the development of some kind of innovation such as new information systems, while longer term benefits often include the ability on the part of the organization to continuously draw on its extended knowledge base and, therefore, continuously create new knowledge and innovation.

There are four main entities involved in a KTP project - the university, the company, the graduate (or ‘Associate’ as they are termed), and the Department of Trade and Industry (DTI), who provides over 50% of the funding for the project for SMEs. The general aims of KTPs are to improve the competitiveness of the company, enhance business knowledge within the university and develop the career prospects of the KTP Associate. The partnerships involve the Associate working within an organisation to deliver a project of strategic value, normally of circa 2 years duration. An academic from the university is assigned for 20 days, per annum, to support and supervise the project, and bring in specialist knowledge and expertise, as is appropriate, to ensure project delivery. Training and equipment are provided, and the total value of the scheme to the partner company, is £40K per annum or £80k over two years. Many of the benefits for universities are derived from the use of KTP projects as case studies for both teaching and research. The case study method is well established as an educational technique in both higher education and continuing professional development (see, for example, Wynn and Taylor, 1980), and some of the documented case studies from KTP projects can be used in both situations. For teaching-led universities, with a clear commitment to research-informed approaches, KTPs provide new and interesting materials for inclusion in the curriculum.

# Management Control Systems

Since Zuboff (1988) introduced the concept of automate- informate-transformate as a sequential process for applying technology in business, there have been many definitions and classifications of systems providing management information as the link between manual process automation and radical business transformation.

The concept of management information systems (MIS) was central to many information systems strategies in the 1990s to ‘provide information for managing an organisation’ (Alter, 2002), by extracting and summarising data from transaction processing systems. Peppard (1993) took these concepts further by developing a grid for viewing application portfolios from a strategic perspective, and the early focus on mainly financial information, was expanded to include a broader range of information to plan and control business operations. The balanced scorecard (Kaplan and Norton 1992), for example, contains not only a financial view of a company, but also the customer view, internal operational information, and human resource perspectives such as innovation and learning. Since the turn of the century, the concept of Corporate Performance Management (CPM) systems has emerged, which Gartner defines as ‘the combination of methodologies, metrics, processes and systems used to monitor and manage the business performance of an enterprise’ (Buytendijk at al, 2004).

Management control systems can be viewed as an example of both MIS and CPM systems. There are two main benefits provided by management control systems. Firstly they encompass a variety of performance information that is relevant to different functions and roles within the organisation. For example, a vehicle fleet manager may need to understand driver efficiencies but not necessarily profit. However the two are clearly related in that improved fleet efficiency impacts profitability in a positive way. Secondly they provide performance information on a regular basis and typically at shorter time intervals than purely financial information. This allows corrective action to be taken when under-performance occurs, before it is too late. In this context, management control systems are more than a mere sub-set of management information systems. They comprise not only a technology component and the information provision noted above, but also a number of related processes – forecasting, planning, reviewing and reporting. There are also often procedures and guidelines for best practice deployment of these concepts. Plans should be developed in line with forecasts and should be reviewed on a regular basis, and corrective action taken whenever they are off- course. Reports should include KPIs and be short and concise enough to be used at team review meetings. Both high and low performances should be addressed by exception and the overall process should provide opportunities for learning by benchmarking. Normally, plans will cascade downwards and reports will cascade upward through the organisation structures. It is important that plans are ‘owned’ at all levels. Management control systems address operational performance throughout the company. They should provide information that is consistent and comprehensive, and culminate in concise performance reports that are being provided to senior management and/or the Board. The main objective of the reports is to provide up to date performance information, which

should facilitate performance reviews and discussions at all levels, and to enable effective action to be taken at the right time.

# Case Study 1: Improving Management Control at Beacons Business Interiors

Beacons Business Interiors (BBI) was established in 1989 as an interiors construction company in Brecon in the heart of Wales. By 2003, the company had increased its turnover to £7.7m by focusing on the provision of facilities support services to blue chip clients, incorporating office furniture installation and design, mechanical and electrical design and construction services. The facilities support market can be divided into different segments (‘blue chip’, the SME

market and the servicing market). In total, the market is valued at £1billion. BBI is in a dominant regional position within Wales, with only a small number of competitors. These are similar sized organisations, which offer similar services, but without the same level of internal resources. Nationally, the competition is more comprehensive in a highly fragmented market place. Before the start of the KTP project in 2004, BBI had implemented some new core information systems (Sage Financials, Goldmine CRM), but the potential bottom- line benefits of this investment was not fully realised. BBI needed to rationalise its business processes and improve information availability and management control to drive company growth to a target of 15m turnover by 2008/9.

# Table 1: Improvements in management control introduced via the KTP project at BBI.

|  |  |  |
| --- | --- | --- |
|  | Before the KTP Project | After the KTP Project |
| 1 | The company receives about 30 invoices a day. To register these invoices and channel them to the right person, was taking about 2 hours a day. | Using the new Project Identifier Program (PIP) this process now only takes ½ hour a day. |
| 2 | The project-costing process took 1 hour every day to process all the invoices and one full day every month to make the necessary calculations and produce the project-costing sheet. These sheets were neither accurate nor on time as the recording and calculation were done manually. | Project-costing is now done automatically on a new Project-Costing Sheet (PCS). This means that manual calculations are no longer necessary and allows timely profit analysis by customer project. |
| 3 | For managing deliveries and suppliers, the project support team had to use one database to find out the purchase order number and then use that code to obtain the purchase order details from a second database. This was time consuming and error prone. | Using new programs written in Visual Basic and Excel - Purchase Order Processing (POP) and Sales Order Processing (SOP) - purchase orders, the supplier details and delivery status are now organised on one sheet per project. As this is an Excel sheet, it also gives the project support team the facility to search quickly for any item of information that they might need, which is related to their project. |
| 4 | It took the accounting department about a day every month to sort out the site staff wages. | Using the new Time Sheet Database (TSD), this has been reduced by 75% and is now done in two hours. |
| 5 | Site staff performance management was not effective as there was no electronic database to make the necessary analysis. | The TSD is equipped with the necessary analysis, making the management of site staff performance more effective. |

Following an assessment of existing business systems and an analysis of business processes, a two-stage strategy was adopted. This initiative was led by the KTP Associate from the University of Gloucestershire, acting as an IT/IS project manager, working in conjunction with the company’s senior management. Stage one was to provide a quick profiling of BBI’s information systems, and then improve software integration to provide new management information, particularly in the areas of profit analysis and sales reporting. Stage two was to take a longer-term view of the systems that are required for the company to support its growth over the next five to ten years. The ‘quick wins’ generated in stage one have themselves proved effective enough to support a significant growth in sales turnover, culminating in winning a £1.75 million contract with the Office for

National Statistics in November 2004. The main improvements in management control that were introduced during the KTP project are listed in Table 1. Some of the key benefits have come from the development of an integrated project-costing sheet, which eliminates the re-keying of data and provides an on-line snapshot of project profitability. This gives the estimation department a quick effective feedback tool to guide their pricing and eliminates painstaking manual work in working out contract detail. A further enhancement has been the introduction of automated programs (POP and SOP) to produce on-line reports for all purchase orders and sales orders that are related to a specific project.

This is of particular value to a company that adds value through design, acquisition, assembly and sale, and is something that neither the Sage Accounting nor Goldmine customer database systems could easily provide. BBI’s procurement department would record purchase orders and sales orders for a specific project in the customer database and then track details from Sage, as a separate operation. The automated program, written and implemented by the KTP Associate, links the two systems and provides one automated project report. Another program provides detailed sales analysis by project and customer, again pooling data from non-integrated systems to provide improved management information and control.

Many aspects of day-to-day operations have been affected by the above developments. The ability of BBI to respond to customers’ information and collaboration requirements has numerous benefits in maintaining existing relationships and securing new business. The introduction of comprehensive, integrated systems solutions, which share a common database, is helping to minimise data duplication and data errors. This has reduced the overheads on management to resolve data conflicts and has generally improved information quality and engendered effective decision-making. Another benefit to BBI will be to allow flexible working from home. BBI have 45 staff members and many of them are away from the office for much of the working day. In the past, effective access to key information from remote PC’s and laptops had been impractical because of its lack of integration. This had frustrated attempts to encourage remote working by sales, engineers and other staff. The new integrated systems platform will make this possible. Simon Oldroyd, BBI’s Commercial Director, comments ‘Already we are seeing significant improvements in information availability that supports our drive to increase turnover and bottom-line profitability. The KTP project is central to the delivery of our five year business plan.’

# Case Study 2: Vehicle Tracking at TPG DisableAids, Hereford

TPG DisableAids is a provider of equipment for the elderly and disabled. The company is a value added distributor of a wide portfolio of products ranging from devices to allow arthritis sufferers to safely utilise various household items and equipment through to customised mobility equipment and portable patient lifting equipment for healthcare professionals. TPG DisableAids also provides 24/7 after-sales support for mobility, transport and lifting equipment to private and public sector customers. Historically, the core activity of the company was giving independent advice, and the sale and hire of stair lift products (such as those provided by Stannah) to the private customer. More recently, it is increasingly providing large multi-site contracts to install, maintain and repair public sector equipment, as well as undertaking large installations, providing disability equipment for healthcare operators

and selling maintenance and repair services. The equipment systems market for the elderly and disabled can be divided into different segments (NHS, local authorities, district councils, residential and nursing homes, private individuals). Nationwide, this is a multi- billion pound market, which is growing as the age profile of the population increases. The Plimsoll Report on the Disabled Equipment Industry puts TPG DisableAids as

the 7th best company in terms of efficiencies (i.e. sales return on employees’ remuneration). The company’s

business plan is to increase its turnover from £3.2m in 2004/5 to £6.5m by 2009/10, through organic growth in the region, notably with public sector entities. This requires new business systems to integrate transaction processing, provide consistent management information and assist field operatives in their duties.

TPG DisableAids corporate information systems are currently centred on three main packages – Sybiz Vision, Sybiz Vision Service Manager and Sage Payroll. Sybiz is Australian owned and has not been very well supported in the UK in recent years. This has given rise to upgrade, integration and performance problems. There are also multiple updates of key corporate data entities (mainly customer and product data), which hamper the provision of key management information. A previous attempt to solve these problems through consultancy failed because there was insufficient understanding of the company requirements. This resulted in the company pursuing the KTP scheme with the University of Gloucestershire Business School. With access to state-of-the-art knowledge and multiple topic experts at the University for advice, the Associate – who started at the company in September 2005 - is acting as an IT manager, reporting to the Finance Director. The Associate is engaged in detailed formulation of mid and long term IS and business strategy, undertaking any necessary business process re-engineering, which would maximise benefits of new systems and procedures. As the company expands, a major benefit of new systems will be recruitment avoidance. This is estimated at two heads per year from 2007 onwards (one in central administration and one in field engineering). A key metric of project success has been stipulated as achieving an administrative-engineers staff ratio of 1:8 (cf 1:6 currently).

In the early stages of business process analysis, an urgent need to track the location of the fleet of field engineers that are responsible for installation, maintenance and emergency repair for TPG DisableAids customers was identified. Through GPS vehicle tracking and reporting, the company was able to meet its need for accurate and reliable fleet positioning to plan and provide on-site presence to customers within an 80-mile radius of headquarters within hours (rather than same day). In addition to basic requirements to meet contractual service level agreements, fleet engineers were able to exceed stated minimum times in order to re-assure and help customers out of stressful equipment failure situations with minimum delay. The new vehicle

tracking system was live within 4 months of the start of the project. In addition to the immediate benefits described above, there were many significant additional cost savings and benefits. The basic web-based user interface, provided by the fleet tracking software provider, has been augmented by the Associate with extensive data analysis and reporting facilities, which draws input from multiple corporate systems. It has been designed to provide valuable management and operational information, as well as enabling new business processes for managed training and human resources duties. The resultant improvements in management control include the following:

*Driver behaviour:* management are able to monitor, log and manage business risks, which are associated with aggressive or overly leisurely driving, engine idling, excessive personal use of vehicles and sub-optimal fuel refilling.

*Vehicle maintenance:* provision of data to drive proactive vehicle maintenance by tracking time based abnormalities to highlight possible electrical faults, monitor fuel consumption and miles-per-gallon.

*Claims reductions:* Use of vehicle tracking data to refute false vehicle road accident claims against the company.

*Improved efficiencies* in driver route planning, emergency call handling and training requirements analysis.

Tracking data is combined with other corporate information to provide knowledge regarding individual engineer times for particular product installations and repairs. This assists accurate planning and also allows training needs to be identified early to benefit individual engineers, as well as the company and customers alike. The standard user reports, which are provided by the tracking system, have also been enhanced with 3D graphical output, which allows management and planners to decide extremely quickly (less than 6 seconds) whether there is unusual activity in individual, as well as group driver behaviour (for example, route diversions, excessive time spent on-site and at headquarters, multiple or a quick succession of visits to the same location, missed opportunities to reduce costs in fleet planning and job scheduling). The ability to quickly and accurately identify and focus on appropriate problems saves valuable management time.

Planned development will allow fleet management to be informed of unusual activity automatically. This will use machine-learning algorithms that track vehicles in real time, as well as provide the more traditional end-of-day or end-of-week batch reports. The use of advanced artificial intelligence (AI) is being investigated to deal with uncertainty in the interpretation of data. A fleet/vehicle management system that integrates fully with other systems to provide a system robust and reliable enough to become ‘invisible’ to management

(except in the situation where their attention is required to deal with alerts or interpret new phenomena), is planned.

Considerable uses for the combined data have been identified. Current effort is being directed towards providing quantitative input into the formation of training strategies and programmes of continuous improvement for engineers (as well as more immediate operational measures). To be successful, such vehicle tracking systems should have perceivable benefits to field staff that often see such systems as invasive, and thereby undermine management-employee trust. By careful selection of appropriate data for feedback to, and investment in, staff, it is hoped that the wider benefits of such systems will become clear - for example, measuring optimal time to install products in conjunction with future failure rates (the costs of which should be absorbed for equipment under warranty).

The company is also actively pursuing the removal of much paper work and a reduction of trivial administrative data entry to free more time for improved planning and to enhance staff training. Long-term collection of this and other data may eventually be used for marketing and/or tender quotations – an ability to show reduced mean-time-to-failure against time-to-install comparisons favourably against industry averages or competitors during negotiations and tender bidding, is becoming a realistic prospect.

Ultimately, however, useful business intelligence, rather than simple data for management, will benefit everyone within and those who are associated with the company. The vehicle tracking system is but one goal of the current KTP programme at TPG DisableAids. Yet, a simple off-the-shelf, budget fleet tracking system has been extensively and strategically exploited to improve management information and control.

# Case Study 3: Upgrading Performance Monitoring Software from SofTools

SofTools is a UK-based software development company that develops and supplies web-based performance improvement applications, to corporate and public sector organizations through strategic partners. SofTools applications deliver three business benefits to corporate and public sector clients: a) increased senior management visibility, control and confidence of business performance; b) improved operational effectiveness and efficiency through the consistent application of best practice; and c) continuous learning and knowledge-sharing across diverse teams. Revenues for 2005/6 increased by 39%, while profits increased by 102% during the previous year. The SofTools technology platform is presently configured into a series of applications that address the varying needs of the corporate value chain. These range from strategic change and corporate venturing, to the tracking of issues, risks and opportunities for improvement –

together these make up the SofTools product portfolio. The company’s customer base covers UK corporate and public sector organizations from across many industry sectors. In 2005, significant projects within the NHS, EDS and BOC were started. Coca-Cola selected SofTools for a fifth year to support their marketing and new product development initiatives. There have also been specific trends that have impacted the SofTools strategy and operations:

*Web-based applications:* the internet and corporate intranet are increasingly becoming the default technology for business applications. Concerns around access and security have largely disappeared, since clients seek the dual benefits of speed of implementation and support and ‘anywhere anytime’ access.

*Project and Programme Management (PPM):* most organisations now accept that project management is a core process for managing both their operations and their strategic change programmes. This includes most aspects of the value chain from marketing and new product development to production and continuous improvement activities. It is also a market space that is ill-served by the traditional market leaders in project management software.

*Innovation:* as many organisations have matured in their approach to project and programme management, many are now turning to innovation and new ideas capture, screening and prioritisation. This covers new business, product, market and process improvement ideas and represents a significant growth area.

*Risk Management:* increased regulation and the need for continuous improvement have brought renewed focus on strategic, process and programme risk management. This requires both best practice techniques and tools to support consistent application across all critical functions of the organisation.

*Corporate Governance:* linked directly to risk management, there is now a significant amount of visibility and focus on the senior management team. They need to manage, and be seen to manage the business in a way that is both highly effective and compliant with regulations. Words such as ‘Compliance’, ‘Governance’, ‘Audit’, and ‘Best Practice’, presently form part of standard management vocabulary. This creates a personal, as well as business need, for visibility and control. SofTools software applications deliver two core dimensions of sustainable performance improvement. Firstly, they give the key decision-makers increased visibility, control and confidence over operations; secondly, they enable operators of all core processes to consistently apply best practice techniques. Traditional approaches to performance improvement typically result in short-term gains [from 1 to 2 in Figure 1], but a performance decrease after the initiative has lost focus, can be

dramatic, resulting in little or no long-term performance improvement. Furthermore, the failure to link new skills to business processes and technical systems can lead to a poor return on the investment. In order to survive and grow in the current economic climate requires a different approach.

SofTools offer a leading-edge portfolio of management templates that sustain performance over the long-term and create a culture of continuous learning and growth [3 & 4 in Figure 1], whether in the field of business planning, sales delivery, project and programme management or analytic trouble-shooting. SofTools are working with Henley Management College (HMC) on a KTP scheme to create the next generation of their software products. The overall aim is to design and develop a new technology platform for the delivery of leading edge software products. SofTools products fall into three software categories. *Business accelerator* applications, which define, implement and control critical business processes and include new product development, corporate venturing, marketing and strategic change. *Tracker applications* monitor and control team and continuous improvement activities, including governance and compliance, and issue, risk and value tracking. *Action Learning* applications are used to ensure the post-workshop application of skills and methods that are learned in the training environment. The KTP project is aimed at developing a new technology and delivery platform for these products and to incorporate enhanced functionality to meet the new requirements and trends outlined above. The project follows a number of distinct phases:

* 1. Research and assessment of web services and new web technologies for the delivery of multi-user software packages.
	2. Specification of technical requirements for the development of a new technology platform.
	3. Analyse, model and optimise the business processes underpinning the functioning of SofTools’ current and new mainstream products (business performance, KPI monitoring, e- learning).
	4. Evaluate state-of-the-art information technology, which is appropriate for the development and delivery of the company’s end-product software.
	5. Design and develop a new database-independent technology platform that will run in a wide range of server and operating system environments; and
	6. Alpha test and Beta test the new platform with existing software modules with current/prospective customers and gather feedback, as well as capture further requirements for future development. The KTP project will provide the foundation for the transitioning of the company to a new web-based technology company with upgraded support capabilities. It will consolidate SofTools position as a niche player in a growing market, which is aimed at the monitoring and improvement of business performance.

# Figure 1. The Performance Hockey Stick

**Concluding Remarks**

The KTP project initiatives outlined above illustrate some key issues around the development and delivery of management control and performance monitoring systems in SMEs. The case studies at BBI and TPG DisableAids support the European-wide research of Fahy (2003), which identifies ‘more accurate customer profitability analysis and improved insight into cost causation and behaviour as the two main focuses of performance management systems. At BBI, the main objective was to obtain a clear view of project profitability, and this helped significantly in the company’s aim to build its business around its most profitable clients. At TPG DisableAids, the key objective has been to ensure efficient driver behaviour and to reduce vehicle fleet costs. In this regard, the case studies support Fahy’s research on reasons for implementing such systems. The case studies also highlight some significant issues in improving information provision in SMEs. Firstly, one does not

have to invest vast amounts to deliver effective management control systems. One does not have to replace all one’s core systems with a new integrated software suite – although this is an ideal position to be in, if achievable, at an acceptable cost and payback. At both TPG DisableAids and BBI, innovative deployment of low cost software solutions delivered valuable and significant information, which has enhanced management control in support of business growth. This was achieved with a mix of old legacy systems and new point solutions in both companies - not an ideal mix of technologies, but acceptable and manageable in many cases. Secondly, one requires the skills and technologies to extract interpret and match data from disparate systems to provide KPI and other management information in real time, and this may possibly involve the procurement and installation of niche reporting software tools to sit on top of, and interface with, core information and transaction processing systems.

# Figure 2. Model Systems Hierarchy

**C or por a t e P e r f o r m a nc e M on it or in g / B us ine s s**

**In t ellig en ce T o o ls**

**---- P e r fo r m a n c e M o n ito rin g &**

**D e c i s ion S u ppo r t - - - -**

**- - R e p o r t ing, C o nt r o l & Ana l y s i s - - -**

**In t eg r at ed E R P**

**- - - - - T r a n sa ctio n P r o cess in g - - - - -**

**M o d el S y st e m s H ier ar ch y**

 **D a t a W a r e house**

Thirdly, these cases suggest a model for systems strategy development for SMEs that is somewhat different from the idealized models of textbooks and consultancies. In the early 1990s, the three-tier model of transaction processing systems-management information systems-executive information systems appeared as a standard for systems strategy development. Presently, this can more realistically be interpreted as integrated ERP-data warehouse- CPM/business intelligence (Figure 2).

Davydov (2001) has noted that ‘the challenge is to integrate the whole set of enterprise wide applications into a single integrated information network’. This is valid enough as an objective of systems strategy, but the means by which it is achieved does not need to involve widespread systems replacement. For many SMEs, this level of investment is unrealistic, especially as many companies have already acquired, over a number of years, individual software packages as point solutions,

particularly for sales order processing and, more recently, customer relationship management (CRM). Faced with the requirement to produce management information for both internal control and improved customer service, a root and branch replacement of information systems is a non-starter for most SMEs. Instead, a pragmatic approach - that maximizes the value of investments already made - is likely to find more support from senior management and the Board. As Sweet (2003) notes, ‘organisations are starting to look at additional technologies and methodologies, which could provide better insights. These include business intelligence (BI) solutions, data warehousing, and a variety of management techniques, some of which are directly supported by specialist applications.’ This may well see the development of bespoke interfaces and reporting systems, as at BBI, and/or the purchase of relatively low cost additional point solutions, as at TPG DisableAids. (Figure 3).

# Figure 3. Software Stack at BBI and TPG DisableAids

**N ic h e So ftw a r e Pa c k a g e s**

**& B e s pok e A pp lic a t io n s**

**---- P e r f o r m a n c e M o n ito rin g &**

**D e c is ion S u ppo r t - -- -**

**C ons o lida t io n & R e po r t ing T o o ls & P r ogr a m s**

**- - R e p or t in g, C ont r ol & A na ly s is - - -**

**P o in t S o lu tio n s & Le ga cy S y s te m s**

**- - -- - T r a ns a c t io n P r oc e s s ing - -- --**

**So f tw a r e S ta c k a t B B I a nd T P G D is a b le A ids**

These case studies also illustrate the value of the KTP scheme, which can be seen in the broader context of learning and knowledge management in organisations (Easterby-Smith et al., 2000). This is reflected in the British government’s determination to create ‘learning societies’ and to build the ‘knowledge-driven economy’ (DfES, 1998). It is recognised that continuous learning, which focuses on creativity and innovation, is the key to thriving in a global, knowledge-based environment as are ‘effective local partnerships between all sectors of the community’ that support and motivate individuals and employers to participate in learning (DfES, 2001). The UK government has been investing in initiatives with the objective of creating links between different knowledge bases and promoting learning and knowledge creation, which can support organizations in becoming more innovative and improve their performance and dynamic capabilities. This partnership should not be seen as a one-way process whereby

knowledge is transferred from the University and planted into the organization. It is a much more dynamic interaction between ‘people with diverse knowledge, disciplines, experiences, and values’ that is ‘the best way to move an existing enterprise forward on the path toward innovation’ (Schaffer and Funk, 2001). Moreover, the ability for *continuous* innovation, which Schaffer and Funk (2001) describe as the most critical business *art,* is increasingly being recognised as the only reliable source of competitive advantage for organizations (Nonaka and Takeuchi, 1995).

At BBI and TPG DisableAids this has involved fresh new thinking from the Associates and academics who have produced *innovative* solutions to the key issues of management control and performance monitoring. At SofTools, the emphasis is more on *knowledge transfer* and, specifically, the introduction of new technologies and expertise to upgrade the company’s product set. It

is these two aspects – innovation and knowledge transfer – that have made the KTP scheme so successful over a 25 year period and which, in recent years, has brought an average bottom-line benefit of over £200K per annum (DTI, 2006) to the companies, which participate in the scheme.

# References

Alter S., (2002) *Information Systems (the foundation of E-business),* Prentice Hall, Pearson Education, New Jersey.

Buytendijk, F., Geishecker, L., Wood, B. (2004), *Magic Quadrant for CPM Suites*, Gartner Research

Davydov, M. (2001) *Corporate Portals and e-Business Integration*, McGraw-Hill, New York.

Department for Education and Skills (DfES) (1998). Green paper: the learning age - a renaissance for a New Britain*.* Retrieved July 21, 2006, from [www.lifelonglearning.co.uk/greenpaper/index.htm](http://www.lifelonglearning.co.uk/greenpaper/index.htm)

Department for Education and Skills (DfES) (2001). *Learning towns and cities*. Retrieved July 21, 2006, from [www.lifelonglearning.co.uk/learningcities](http://www.lifelonglearning.co.uk/learningcities)

Department of Trade and Industry (DTI) (2006), *Knowledge Transfer Partnerships* Annual Report 2005- 6, DTI, Crown Copyright. [www.dti.gov.uk](http://www.dti.gov.uk/)

Easterby-Smith, M., Crossan, M., & Nicolini, D. (2000). ‘Organizational learning: Debates Past, Present and Future’. *Journal of Management Studies,* 37(6), 783- 796.

Fahy, M (2003), ‘Barriers to Corporate Performance Management’, *Corporate Performance Management*, Conspectus Report, June

Kaplan R S and Norton D P (1992) "The balanced scorecard: measures that drive performance", *Harvard Business Review* Jan – Feb pp 71-80

Nonaka, I & Takeuchi, H (1995). *The knowledge- creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

Ozga, J & Jones, R. (2006). ‘Travelling and embedded policy: The case of knowledge transfer’, *Journal of Education Policy,* 21(1), 1-17.

Peppard J (1993), *IT Strategy for Business*, Pitman Publishing, London.

Schaffer, C, Funk, K, & Cothrel, J (2002). *Learning to innovate*. Retrieved November 25, 2005, from [www.providersedge.com/docs/km\_articles/Learning\_to\_I nnovate.pdf](http://www.providersedge.com/docs/km_articles/Learning_to_Innovate.pdf)

Sweet, P (2003) ‘Looking before you leap’, *Corporate Performance Management,* Conspectus Report, June

Wynn, M & Jones, P (2006). ‘Delivering business benefits through Knowledge Transfer Partnerships’, *International Journal Entrepreneurship and Small Business,* 3(3/4), 310-320.

Wynn, M. and Taylor, J. L. (1980) ‘Training for Urban Management: The Case Study Dynamic’, *Journal of European Industrial Training,* Vol 4, No 6, pp 26-28

Zuboff, S. (1988). *In the Age of the Smart Machine,*

Basic Books, New York.

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