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# TOOLS FOR COLLABORATION AND INNOVATION IN SMES

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**Rezumat**. *IMM-urile (întreprinderile mici și mijlocii) și micro-întreprinderile reprezintă coloana vertebrală a economiei UE. Prosperitatea acestora este un factor esențial pentru ca locurile de muncă în UE să fie mai multe și mai bune. Acestea sunt vitale pentru îndeplinirea obiectivului de a realiza o societate echitabilă și productivă cu un grad mare de integrare socială și economică. Cu toate acestea, ele sunt adesea slab echipate pentru a-și îndeplini rolul de inovator și întreprinzător, în special în tranziția continuă către o societate bazată pe cunoaștere. Acest lucru se datorează diversității mediilor academice dar și lipsei lor de pregătire. Această lucrare rezumă activitățile aflate în curs de desfășurare de către două echipe diferite din Europa, care doresc să dezvolte și să implementeze cursuri de formare și instrumente pentru a consolida capacitățile și capabilitățile de inovare și de colaborare ale întreprinderilor mici și microîntreprinderilor.*

**Abstract**. *SMEs (small and medium-sized enterprises) and micro-enterprises are the backbone of the EU economy. Their prosperity is a crucial factor for achieving more growth and more and better jobs in the EU. They are vital to fulfilling the goal of a more equal and productive society with higher social and economic integration. Yet they are often poorly equipped to fulfill their potential as innovators and entrepreneurs, especially in the relentless transition to a knowledge based society, both because of their diverse academic backgrounds and their lack of training. This paper summarizes work currently underway by two diverse teams across Europe to develop and roll out a suite of training and tools to enhance the innovation and collaboration capacities and capabilities of small and micro-businesses.*

**Keywords:** innovation, collaboration, SME, management, competition

## 1. Introduction

SMEs (small and medium-sized enterprises) and micro-enterprises are the backbone of the EU economy. Their prosperity is a crucial factor for achieving more growth and more and better jobs in the EU. They are vital to fulfilling the goal of a more equal and productive society with higher social and economic integration. Yet they are often poorly equipped to fulfill their potential as innovators and entrepreneurs, especially in the relentless transition to a knowledge based society, both because of their diverse academic backgrounds and their lack

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of training. This paper summarizes work currently underway to develop and roll out a suite of training and tools to enhance the innovation and collaboration capacities and capabilities of small and micro-businesses.

Many government programs currently support innovation throughout Europe. These measures play a key role in helping organisations to innovate both better and faster, by addressing specific market and system obstacles that hinder European companies, in particular SMEs and micro-enterprises, from fully exploiting their full innovation potential. Much of this effort is centered around providing better training to owner/ managers of small companies. However, no training, no matter how comprehensive and well-delivered, can hope to retain lasting impact without some clear focus on practices, procedures and, especially, tools leading to action as a way to effectively carry out the learning, insights and skills transmitted and to motivate and fully support course participants in their enduring efforts to produce innovation.

Not so many years ago, most of us relied on closed, proprietary software to create documents, crunch numbers, surf the Web, communicate, etc. Today the landscape has shifted dramatically, with tens of millions of people taking advantage of free open source software that is equal to — and often superior to — tools created the old way.

### 1.1. The Changing Business Environment

"The Internet of Everything will re-invent industries at three levels: business process, business model, and business moments (They are transient opportunities exploited dynamically)" [8].

Business is changing, and developments in ICT in particular are driving this change. The Gartner Group is suggesting that the world is entering the "the third era of technological and societal trends".[21] Much of this change is being driven by "social media, cloud computing, analytics and mobile enablement, along with the internet of things".[21] New small, agile and innovative companies are constantly being formed to exploit opportunities in this space. This is an age of radical technological innovation, a "period of discontinuity" [24] where "radical changes create new businesses and transform or destroy existing ones".(ibid) "As companies digitize products and process, completely new ways of doing business in industries emerge".[8] Even the business environment surrounding small businesses has developed and changed rapidly in recent years. Changes in the overall market (e.g. recession), distribution models for both products and services (e.g. APPS, remote monitoring), customer needs and expectations (e.g. web 2.0 and self-generated content, review sites), entire new industries (e.g. social media), emerging markets (so-called BRICs) and low cost products have driven change and created opportunities for small agile companies. A more fundamental change

is taking place in the wider marketplace as previously separate industries converge. The most dramatic is taking place in the "booming space of Telecommunications, Information technology, Media and Entertainment, which many people now refer to as a single field, the 'TIME' industries" [12].

This convergence is leading to an explosion in new products and services being offered and also to a surge in the "complexity of their markets and how companies win".(ibid.) New companies with services and products that straddle the 'TIME' terrain are being formed to exploit the opportunities presented by this convergence.

### 1.2. Innovation Union

The key concept that comes through this rapidly changing business environment is Innovation. Recent policy initiatives from the European Commission have had a major focus on Innovation.

"Encourage the growth of SMEs and promote an entrepreneurial culture …..and promote industrial innovation". [7]

A cynical observer might suggest that 'innovation' is nothing more than the current 'buzzword' for politicians, however the focus being given to it by policy makers at all levels, and the follow through with specific and detailed government action plans, belies this notion. The EU has coined the term 'Innovation Union' and is committed to "innovate our way out of the crisis". [14] The annual Innovation Union Scorecard "a comparative assessment of the research and innovation performance" [13] is watched closely and taken seriously by Governments.

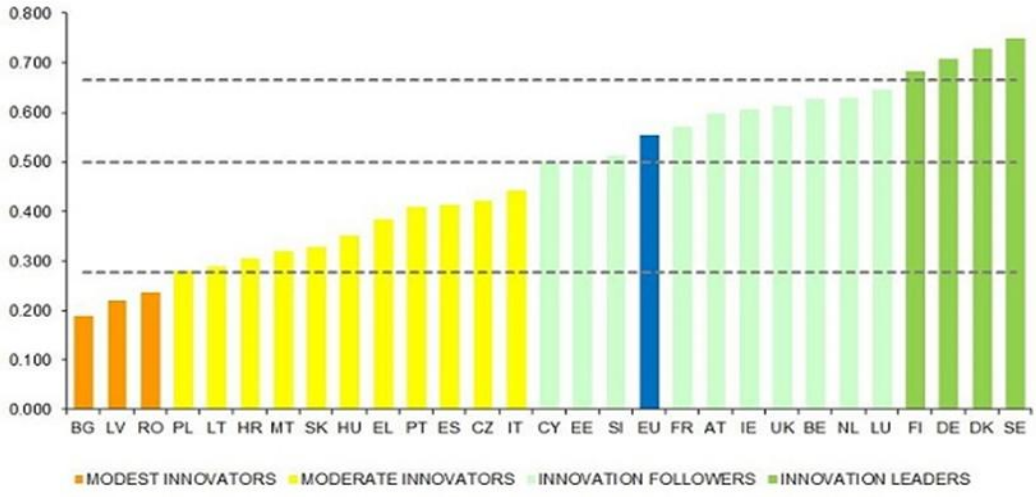


**Fig. 1**: EU member states' innovation performance [18].

This scoreboard "helps Member States assess areas in which they need to concentrate their efforts in order to boost their innovation performance", [13] and the relative position on the scorecard is one indicator used by Governments to assess the performance and adequacy of supports being offered to businesses e.g. "UK is second in the EU Innovation Scoreboard for Linkages and Entrepreneurship. Government plays a key role in creating these conditions that release the innovative potential of the economy". [11] In the UK the Technology Strategy Board describes itself as "the UK's innovation agency" offering "support and funding to help business develop new products and services". [22] Similar agencies exist across the EU.

### 1.3. Innovation Union and the SME

Along with the over-riding drive of the Commission to push an innovation agenda, there is an understanding that the small and micro business sector is critical to providing a foundation for delivering the 'Innovation Union'. Specific polices have been forthcoming from Brussels in recent years to support the SME sector – The Small Business Act for Europe [5], The Entrepreneurship 2020 Action Plan [6], the Programme for the Competitiveness of Enterprises and small and medium-sized enterprises [2] - to name the more significant Commission policies. Each of these initiatives are filtering down through the national policies (e.g. Ireland, Action Plan for Jobs 2014,[16]) and into regional and local policies (e.g. Ireland, Supporting Economic Recovery [15]), Local Enterprise Offices [20]). The core of all these policies is to provide nurturing and support to high potential innovative start-ups and early stage companies across the EU.

Many government programmes currently support innovation throughout Europe. These measures play a key role in helping organizations to innovate both better and faster, by addressing specific market and system obstacles that hinder European companies, in particular SMEs, from fully exploiting their full innovation potential.

SMEs, and especially micro enterprises (in part because of their size) face various challenges such as the need to continually update their skills and professional competences. In this paper we examine ways, and especially tools, that are being identified to address the above issues.

### 1.4. Start-Up and Early-Stage Support

The 2010 Global Entrepreneurship Monitor [9] revealed some challenging statistics for the EU. Between 2007 and 2010 there was a decline in "perceived opportunities to start a business", most dramatically in Ireland and in Spain. In parallel there was a significant rise in the creation of "necessity-motivated new business ventures" many of which were operating at the margins of profitability. The number of people in the UK who aspired to start up their own company fell

below the G7 average. The UK also performed poorly in terms of the female to male entrepreneur ratio, with women running considerably less than half the number of businesses run by men. Those who did start a business tended to set their sights low: Across the European Union the number of people who expected their company to employ 20 or more people had fallen significantly compared to 2005. Despite these negative trends, however, there was also a significant minority of entrepreneurs in all the EU countries surveyed who saw opportunity ahead rather than danger. They tended to be younger and better educated and generally had higher aspiration levels in terms of job expectations and innovation prospects.

Given the current economic crisis and the importance placed on private sector job creation by the Commission, these figures show that strong action is needed to train and encourage more people to set up new businesses, and to help established owner/managers to grow their businesses to their full potential.

### 1.5. Innovation – Technical and Non-Technical

At the European Union level the need not just to foster conditions which facilitate SME growth but to address the relative lack of business innovation relative to other competing regions of the world underpins a number of key policies and initiatives. Innovation in this context is assumed to involve a significant technological advance. However, a number of business support agencies and academic researchers in the European Union have begun to recognise that while technological innovation offers great benefits, it is not the most important challenge for the vast majority of SMEs. The most pressing problem for this generation of European SMEs is survival. To achieve that undoubtedly does require innovation; but for the most part, non-technological innovation. This involves the adoption of new business models and new organisational structures as well as the use of new marketing tools.

When the need to innovate is mentioned to SMEs the response of many is to assume that this must mean that they would have to commit to expensive research and development and for that reason most believe innovation is beyond their capability. By not fully understanding what innovation means, too few SMEs are motivated enough to change their structures and practices and to invest in what is needed to retain their competitiveness.

### 1.6. Innovation Support

It is widely accepted that Business Trainers and Mentors (BTMs), through Chambers of Commerce, Enterprise Agencies, Higher Education Institutions, accountancy practices, private sector consultancy firms and Business Innovation Centers have a vital role to play in improving SME competitiveness. Yet, it is also becoming increasingly clear that their support needs to be better tailored to the

needs of Europe's multiplicity of SMEs which vary depending on the sector they are in, the background of their owner/managers, their location and that of their markets and their size. [4]

The DG Enterprise report on Good Practice in SME Support Services stated that "while some very good business support services exist across Europe there is a significant opportunity for improving the general quality of services". There is also much less research into and understanding of the dynamics of SME growth and the role of innovation. Government business support provision across Central and Eastern Europe is weak and non-governmental organisation support structures are largely non-existent. [3]

### 1.7. Supporting Innovative SMEs

This paper summarizes work currently underway across Europe to develop and roll out a suite of training and tools to enhance the innovation capacities and capabilities of small and micro-businesses. Two currently active EC co-funded projects, mainly the Innovative Trainer Project (ITP) and Skills for Collaboration in Virtual Teams (SCI-NET), focus on increasing the capacity for innovation and collaboration by SMEs (especially micro-enterprises), in part through innovative training courses.

However, no course, no matter how comprehensive and well-delivered, can hope to retain lasting impact without some clear focus on practices, procedures and, especially, tools to effectively carry out the learning, insights and skills transmitted that will lead to pragmatic results. Furthermore, innovation is a team sport that requires extraordinary collaboration. Simply stated, if there is no collaboration there will be no innovation. It is also our contention that effective collaboration can benefit greatly and be multiplied by the judicious use of appropriate tools.

## 2. Innovative Trainer Project

### 2.1. Summary of ITP

The Innovative Trainer Project (ITP) project aims to enhance the ability of BTMs to support SMEs across the European Union by providing them with a "Train the Trainer" blended learning training resource on non-technological innovation. The rationale for this effort is that SMEs are crucial to Europe's future prosperity and its prospect of building a sustainable economy based on knowledge and innovation. BTMs provide a support structure with good local access and as such should be at the forefront of the European Union's efforts to encourage innovation and growth among SMEs. They work within the public, non-profit and private sectors. With updated skills they would be better placed to improve the performance and growth of their clients.

ITP has recognized that while good BTM practice does undoubtedly exist, the extent and especially the sophistication of BTM services vary across the EU. Many lack an awareness of the full potential of their role as business educators. A baseline survey of BTMs and Government-sponsoring bodies carried out by ITP across the European Union has identified significant gaps in the services which they offer.

### 2.2. ITP Methodology

The goal of ITP is to enable BTMs to better provide expert, personalised assistance and in turn to have a positive impact on the survival and growth rates of their start-up and early stage business clients.

Training materials have been transferred into multimedia e-learning and classroom (blended) formats and a transnational pilot testing exercise. A group of BTMs and business client trainees across Europe are trialing both the online and classroom course with a view to generating quantitative and qualitative feedback which will be used to adjust and refine the materials as necessary to produce an effective and freely available resource. The course has been split into four modules. Learners can move through a linear progression from Module 1 (Your Inner Innovator) through Modules 2 (Types of Innovation) and 3 (The Innovation Process) to Module 4 (Your Action Plan) or put together their own menu moving back and forth between modules depending on their own particular needs and interests.

### 2.3. Differentiation of ITP

What differentiates the approach taken by ITP is that it is helping BTMs to unlock the ‘inner innovator’ in each of their business trainees. ITP’s premise is that the extent to which a business is innovative today and will continue to seek to innovate rather than ‘rest on its laurels’ depends on the attitude of its key personnel. BTMs are being provided with tools which will help those people to analyze their personal histories to reveal the psychological and philosophical 'grain' of their characters as business men and women so that they can recognize what it is that can potentially make them successful and what it is that might potentially hamper them in business.

Innovative Trainer is distinguished from other initiatives which promote ‘innovation’ by its focus on non-technological innovation. Its rationale is that while primary research-driven technological and scientific innovation is of enormous economic significance, the scope for a business to be innovative does not solely depend on its initiating and/or adopting technological or scientific discoveries. A company can be innovative if it adopts a new approach to doing its business: it can be innovative in many non-technological ways, from how it markets its products, how it sells its goods, to how it organizes and supports the efforts of its workforce in a ’culture of creativity’.

This concept of 'non technological innovation' opens up the prospect of being innovative to many, many more businesses, in fact to the majority of businesses who would otherwise be intimidated by the widely held assumption that to be innovative they would have to be operating in a costly, esoteric world of science, electronics and high-end engineering.

### 3.1. SCI-NET Project

The Skills for Collaboration in (virtual) Networks (SCI-NET) project goal is to create a training workshop to significantly increase SMEs knowledge and skills related to collaboration – especially for innovation.

The on-going project delivered a pilot workshop to 12 SMEs in mid-June 2013 and followed up with a three day collaborative training event at Airbus and the University of Toulouse.

There will be follow-up improvements and supporting materials developed over the remaining lifespan of the project.

To these ends tools (mostly open-source and/or free) have had a powerful impact on advancing innovation and collaboration amongst the cadre of SMEs in domains such as: MindMapping, Collaborative Document Creation, Action Tracking and Knowledge Management.

Free and open source software (FOSS) use is advancing significantly worldwide thanks to increasing market share, reliability, performance, scalability, security, total cost of ownership (TCO) and, perhaps most importantly, freedom (from control by a single source, from licensing management) [25].

Things are no different in Europe where FOSS also continues ever-increasing acceptance – including even the French Gendarmerie. [10]

### 3.2. Summary of SCI-NET

"Many open-source technologies have been in existence for many years, and for some, over a decade. These technologies have proven themselves to be mature and very stable. As with any technology implementation, however, organizations must go through a thorough evaluation process. Not all open-source technologies are built the same. Look for mature technologies with a reasonably large community and install-base" says Luis Sala, senior director of product marketing and cloud computing at Alfresco Software. [19]

Based on the foregoing view, it would be a boon to SMEs, and especially resource-strapped micro enterprises, to proactively support them by identifying, evaluating and, eventually, proposing a "suite" of appropriate and effective technologies and tools that addresses user needs in advancing innovation and collaboration projects.

### 3.3 SCI-NET Methodology

The primary analysis has been based on the ICDT Model [1] developed by Professor Albert Anghern of INSEAD in France that gives a solid theoretical basis to the tools to be introduced for use by SMEs and micro enterprises. The platform lays out the support needed for activities in a virtual space. Originally developed as a framework for Internet (and its related services) opportunities and threats it is here adapted for use in support of SME training for improved innovation and collaboration within the context of joint projects.

An outline of the platform gives an idea of activities and benefits by type of space and gives an initial idea of possible benefits.

1. The Information Space (IS) is about visibility. It operates like a large billboard. It shows who's who, what's available, how much it requires and so on. In our implementation it becomes collaborative and can be "built together" – examples tools in this space are Pearltrees and the plethora of Wiki tools.

2. The Communication Space (CS) is about interaction. Like a café, it is provides a "space" for engaging in relationship-building, exchange of ideas or opinions. Project members can communicate at high speed, low cost, and bypass traditional physical and geographical constraints. In our implementation this space is represented by simple, but powerful, tools: Skype, PiratePad.

3. The Distribution Space (DS) is about service or project components delivery. As with the postal service, there are constraints on the types of items that can be delivered through this channel - it is only suitable for products and services which can be wholly or partly digitalized. Examples of tools here are Dropbox and Apache Subversion (SVN used as an archival facility).

4. The Transaction Space (TS) is about promises and commitments. This space is supported by tools such as Google Calendar.

In the planning and production of the training courses, particular care has been taken to choose the most appropriate tool sets for the various key functions, namely the tools that best support working together to achieve innovation. As indicated above the four main "spaces" or areas that will be supported are Information, Communication, Distribution and Transaction (ICDT).

Each area above will have a tool or tools that support effectiveness in each one. Many of the tools to be used have been well implemented and validated by previous project teams themselves. Furthermore, no "one size fits all" approach has been taken; nor are tools presented as the "best" or "only" approach, but rather as the best fit for particular situations and uses – with the possibility of being supplanted over time.

### 3.4. SCI-NET Technology Description

Models such as ICDT have served as frameworks for Internet-based tools used by communities of collaborators - operating both as 'suppliers' and 'consumers' of knowledge. However, there does not seem to have been a specific focus on a framework and pragmatic viable structuring of currently available open source tools that span the aforementioned domains and, also, the specific needs of SMEs (especially microenterprises) engaged in innovation activities. Furthermore, the increasingly rapid advancements in IT technology – especially the ubiquity of mobile devices, tablets, etc. – points out the need for both up-to-date and appropriate choices for the key tools to be used.

In addition, tools intended for effective use by SMEs (most especially micro enterprises) must respond to particular criteria such as:

- Low or no-cost: hence the focus on open-source solution.
- Manageable learning-curve: hence ease and immediacy of use.
- Dependability and robustness.
- Scalability: to the project or community.
- Security.

These tools must excel in their support of what are essentially Learning Communities and Knowledge Exchange applications.

The tools chosen are described below; as to why these were chosen – expert judgment and crowd-sourced approval have been the approach.

Expert judgment refers to the straight-forward process of having experienced users choose the "best" tools based on availability, costs (pricing, support, and learning curve), features (adapted to SME and micro enterprise needs within each space), reliability and actual benefits delivered.

Crowd-sourced approval refers to intensive use by project teams where members give real-world approval indicated by their measures of adoption and effective use, satisfaction and benefits delivered.

Indicated below are the primary tools (at this point in time) with a short "tagline" description for each:

- Pearltrees – visual and collaborative curation.
- Wikis –collaboratively created websites for knowledge management.
- Popplet – collaborative mind mapping.
- Scribblar – collaborative whiteboard.
- Skype – VOIP-based conference calling/video.
- PiratePad – collaborative text creation/editing.
- Google Calendar – activities + tasks, multiple calendars.

- Dropbox – sharable file/image storage repository.
- Google Docs – collaborative document, spreadsheet creation/editing.
- SlideShare – sharable PowerPoint presentation repository.

Most of these tools are web-based, thus online and PC/Mac based, but they are also usually accessible via tablet and/or smartphone. Most all, if collaborative, do so in real-time. Some offer a native, that is to say, off-line possibility.

### 3.5. SCI-NET Developments

From a general, high-level view the ICDT model gives a good representation of which tools exist, what their primary (but not necessarily exclusive) uses would be and at which point in the framework they have significant impact.

However, by working directly with users in various and different environments, it became clear that creating a more specific framework or process would clarify and better lead users to producing tangible results via the effective use of the indicated tools.

To illustrate the approach taken in the Innovative Trainer Project, process models were used to better match the environments, situations and needs of SMEs. In this case the specific process has been simplified to three major sequential phases of Conception, Implementation and Marketing. Tools for each process were identified and trialed.

1. Conception includes requirement analysis, idea generation, idea evaluation and project planning. These activities are supported by tools such as Pearltrees, Popplet and Scribblar.
2. Implementation covers development and construction, prototype development, pilot application and testing. At this phase the key tools are Skype, PiratePad and Google Calendar
3. Marketing comprises production, market launch and penetration (the latter two at the national and international levels). Here there are a plethora of tools available. Within the context of this particular project we have only just begun to focus on tools such as SlideShare, Prezi, YouTube and the slew of social media platforms (Facebook, LinkedIn, and Twitter).

Based upon the U.S. Department of the Interior's Collaboration Framework Workshop [23] this four-stage circular process is a powerful, yet simple, approach to outlining the key steps of successful collaboration. The collaboration process begins with situation analysis, followed by partnership formation and project design, then consensus building and, finally, implementation and circling back to situation analysis. In each of these stages certain tools come to the forefront and, naturally enough, some tools span stages and interlink with others.

## 4. Results of ITP and SCI-NET Projects

Since both above-mentioned projects are of 24 months duration and have, at the moment of writing this paper, run just over half of their project life the results achieved are, necessarily, preliminary but, nonetheless, they are promising and help indicate areas of potential benefits to closely monitor and follow up on.

The key results, so far, have been clearly a higher level of focus and consensus of partnership members to the objectives of the project. Furthermore there is a better efficiency in performing certain key activities. As an example of the "flow" of tools used, by the project teams themselves the following specific results have been observed:

- The use of Pearltrees has allowed all members to work as a team to build a common visual "skeleton" of the project covering such areas as: project team composition (countries, organizations, individuals), work-packages outline, key dates of deliverables, potential associates, dissemination targets (organizations, individuals), research findings and linked web resources that support the project. Even, in the cases of EC project use, the creation of "trees" that contain project assets (documents, reports, videos, images, presentations, etc.).
- Popplet has permitted project teams to brainstorm at needed junctures - especially valuable has been the use of this mind-mapping tool to layout the structure of framework (the prototype in some sense) of work-packages, deliverables and activities. Being collaborative allows fuller, real-time participation and permits the highlighting of areas where there is a lack of concurrence or clarity. Furthermore, open questions can be explicitly brought out (and potential solutions presented at the moment or later).
- PiratePad, used in conjunction with Skype, has proven to be a great success in both adoption and results. Given that most users are familiar with the use and benefits of VOIP-based telephony (whether they use video or not) the further step of documenting the key details of conference call meetings, with a tool such as PiratePad, that requires hardly any setup and has a very shallow learning curve, has been well adopted and clearly beneficial - before, during and after meetings.
- Calendaring and Task Listing Tools (such as Google Calendar) suffer from a lack of common usage and have been less collaborative than tools mentioned above. In some cases there has been difficulty in standardizing given that many users already have a "preferred" method to handle these activities. Nonetheless, both these tools are of great utility to individual project members and we can look forward to developing strategies to motivate and empower users to adopt these tools also.

### 4.1. Business Benefits of Collaboration, Training and Tool Usage

The benefits to SME and micro enterprises stemming from the use of these tools fall into the areas of efficiency, effectiveness and, even to some extent, transformation.

- Efficiency from the point of view of completing activities faster and with fewer resources such as quickly building collective knowledge databases and easily sharing them via team curation.
- Effectiveness from the point of view of completing activities giving better output and higher value such as improved consensus and better linkages of key components via mind mapping and the collective, documented "memory" of jointly developed documentation.
- Transformation from the point of view of having greater clarity, about key tasks, that contributes to meeting project goals in the timeliest manner and also supports increased trust via interconnected task lists with clear actionable items, assignment and deadlines.

Getting concrete measures in each of these areas is one of the key challenges that both aforementioned projects will focus on for the remainder of the projects.

## 5. Conclusions

In conclusion, an approach has been developed, and is being piloted and evaluated, that shows that appropriate open source/freeware tools, structured within a framework and with a specific process view, can support and enhance innovation and collaboration leading to increased benefits in key areas for SMEs and micro enterprises throughout Europe.

1. ITP proposes that irrespective of technological and scientific novelty, the extent of 'innovation' in a business will depend on how much of the 'catalystion factor', i.e. the energy, doggedness and insight of its key people, it possesses. ITP's rationale is that there should be more focus in business training and mentoring across the EU on individuals who start and run businesses, at least as much as there is on the research labs and R&D teams working in the higher education sector. While a huge investment is being made by the EU to fund primary research, in relative terms very little is being invested to help those entrepreneurs who have that energy, doggedness and insight to exploit economic opportunities. With ITP's resources BTMs will be able to concentrate more of their efforts on unlocking the innovative potential of each of their clients.
2. One major outcome of ITP is an Action Plan for Innovation (API) for each participating SME/Micro enterprise. It is recommended that to best support continuing effective advancement on the API a personalized "platform" of tools be put in place for BTMs and participants thus leading to achievement of intended innovation(s).

3. It is further recommended that BTMs will need to be assessed on their ability to "teach" these tools (and to integrate them into their own processes), while course participants need to be measured on skills, motivation and actual effective use of the selected tools.
4. For SCI-NET, a similar recommendation, to help fully establish the intention of improved collaboration is clearly to enable the creation of a Personal Collaboration Manifest outlining commitment to an appropriate individualized process and the adoption and monitored use of key tools.
5. A final recommendation concerns the "uptake" or the change process for SMEs and micro enterprise personnel to travel through the stages of awareness, interest, trying and, finally adopting both new tools and new behavior. Resistance can be expected and must be clearly addressed from the beginning with the full panoply of enablers and facilitators.

In summary, open source and freeware that has been appraised and "packaged" for use by SMEs and micro enterprises in order to increase their competitive advantage in an increasingly global market via improved collaboration can be a key contributor to Europe's long-term economic and social success. In a nutshell, "tools that help SMEs grow, at lower costs".

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