Peer Review on the "Use of web-based tools for OSH risk assessment"

Dublin, Ireland, 2-3 October 2017

European SMEs need to conduct more risk assessments. Can web-based tools help regulators with this aim?

Host Country Discussion Paper - Ireland

Written by Victor Hrymak, Dublin Institute of Technology (DIT)

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Contact: Susanna Ulinski

E-mail: susanna.ulinski@ec.europa.eu

Website: http://ec.europa.eu/social/home.jsp?langId=en

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Executive summary

The focus of this discussion paper is on BeSMART, a web-based tool for Occupational Safety and Health (OSH) risk assessments, which has been developed by the Irish Health and Safety Authority (HSA). The contents of this discussion paper are based on HSA data, documents and interviews held in July 2017, as well as other relevant literature.

Since its inception in 2011, BeSMART has reached and interacted with a quarter of all Irish small and medium-sized enterprises (SMEs), representing over 43,000 businesses. Feedback from Irish business leaders, social partners and users of BeSMART is very positive. The HSA describe BeSMART as their most effective intervention ever for the SME sector.

The utility of BeSMART, and other similar web-based tools, will be demonstrated in this discussion paper. After six years of use, BeSMART has matured into an easy to use, trusted, and interactive platform that has interacted with a sector that is traditionally regarded as hard to reach for labour inspectorates (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016).

Since 2011, BeSMART has successfully targeted over a quarter of the Irish SME base, allowing businesses to conduct and produce their own OSH risk assessments and OSH statements (including a one-page health and safety policy) free of charge, validated by the HSA and without the costs associated with hiring OSH consultants. According to the HSA, the total savings for Irish businesses is estimated to between EUR 31-45 million. The BeSMART team report that this cost saving is derived, in its entirety, from businesses not needing to hire OSH consultants to produce risk assessments and OSH statements. The HSA estimate the cost of hiring OSH consultants to produce risk assessment and OSH statements for SMEs since 2011 to be between EUR 1,000-1,500 per company.

BeSMART is run by a team of four full-time labour inspectors and one administrative staff member. In 2016 alone, the BeSMART team interacted with over 8,000 new users, produced 140,000 risk assessments, and 7,000 OSH statements, received over 62,000 website visits and saved Irish businesses an estimated EUR 11 million. In terms of regulatory interactions, this roughly represents one BeSMART inspector dealing with over eight SME businesses daily.

This ratio is in sharp contrast to traditional EU regulatory paradigms that involve labour inspector visits to individual businesses. The current regulatory ratio regarding the entire EU workforce is estimated to be one inspector for every 9,000 workers, with some 20,000 inspectors conducting about 1.5 million inspections annually (European Commission, 2014). This represents a low level of regulatory coverage given that in 2013, there were some 21.6 million EU businesses (EU-OSHA, 2017). Walters & Wadsworth (2016) summarise this situation by stating that 'nowhere are there sufficient numbers of inspectors to make regular face-to-face contact with owner-managers a serious prospect'. The result is that SMEs can go for many years before they are inspected (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016; Tombs and Whyte, 2013). The potential of web-based tools, such as BeSMART, are therefore clear, particularly in terms of reaching and interacting with the SME sector.

By exploiting the ability of IT platforms to efficiently communicate with a large number of businesses, labour inspectors now have the potential to significantly increase their influence in this sector. As Walters & Wadsworth (2016) point out, given the current number of EU inspectors available and the sheer scale of businesses they now have to cover, there is consensus on the need for alternative strategies to traditional paradigms of inspection. However, as will be discussed in this paper, there is the question of just how effective these web-based tool interactions actually are, in terms of preventing accidents and ill health.

BeSMART also offers further potential opportunities to increase the utility of OSH web-based tools as part of EU labour inspectorate regulatory activities. For example, BeSMART is beginning to extend into OSH management and has already produced a health and safety plan template for the construction sector. An educational health and safety representative initiative is also available highlighting BeSMART's ongoing educational role. A mobile application is also under consideration. These are natural developments which should be welcomed. Furthermore, there is no reason why platforms such as BeSMART cannot be incorporated into the current and well-established International Labour Organisation (ILO) and International Standards Organisation (ISO) OSH management systems, as well as similar Member State risk management standards (e.g. British Standard (BS) OHSAS 18001 which is due to achieve ISO 45001 status in 2017).

In summary, there are pragmatic advantages that BeSMART, and other similar web-based tools, bring to labour inspectorates wanting to reach the SME sector. In considering how best to support the further development of such tools, four areas need to be investigated: how to increase their use, evaluating how effective they are, where they stand in the European workplace OSH legal framework and finally how they can be utilised for enforcement purposes.

1 Situation in the host country

1.1 The context for introducing BeSMART

The international financial and banking crisis of 2007, preceded and contributed to a deep and prolonged economic recession in Ireland that began in 2008. An over reliance on international credit along with a housing price 'bubble' that burst in 2008 precipitated the Irish recession and saw the unemployment rate go from 6.5% in 2008 to reach almost 15% in 2012. In late 2010, the Government of Ireland was forced to request financial aid from the so called 'Troika' which consisted of the European Commission, the European Central Bank and the International Monetary Fund. Part of the conditions for financial aid laid down by the 'Troika' were substantial cuts in public funding and rises in personal and business taxes.

Against this backdrop, a Government commissioned report (Business Regulation Forum, 2007) on reducing administrative burdens on Irish businesses from regulation, recommended a 25% reduction in all regulatory time and cost burdens.

During 2009, the Department of Jobs, Enterprise and Innovation acted upon this 2007 report and specifically requested the HSA to achieve savings of EUR 60 million for those Irish businesses required to comply with health and safety requirements. This request compounded the challenges already facing the HSA as result of the economic recession. Beginning in 2008, the inspectorate endured funding cutbacks which in turn led to a reduction in staff numbers. The requirement to protect Irish workers remained but the inspectorate was faced with having to regulate businesses with substantial cuts in funding and personnel.

During 2009, the HSA consulted widely with its own staff, senior civil servants, social partners and business leaders with a view to meeting this required saving of EUR 60 million. As part of these consultations, one area of potential savings became apparent. The technical and legal nature of risk assessment and OSH management requirements for all businesses, had led to the use of external OSH consultants to produce risk assessments, OSH statements and OSH management systems by many business owners. It became apparent that if these business owners could be enabled to produce their own 'in house' risk assessments and OSH statements, then cost savings were possible. Having decided that this strategy was feasible, during 2010 the HSA began to develop a web-based tool to allow business owners to produce their own risk assessments and OSH statements. The result was the launch, in 2011, of BeSMART, an acronym for Business Electronic Safety Management and Risk Assessment Tool.

2 Policy measure

2.1 Introduction to BeSMART

As with all EU Member States, the requirement for OSH risk assessment is legally embedded within Irish statute law. In Ireland, all employers are required to risk assess their work activities and identify, 'so far as is reasonably foreseeable' all hazards that can cause accidents or ill health. These hazards, together with an evaluation of the resultant risks are required to be written down, reviewed and controlled 'as far as is reasonably practicable' (Section 8.2 SHWA 2005).

BeSMART is an interactive web-based tool designed to allow SMEs to comply with these legal requirements by producing and recording OSH risk assessments and OSH statements. It is free of charge and is entirely administered by the HSA for the benefit of Irish businesses. There are four distinct objectives for BeSMART:

- to improve health and safety;
- to save users money;
- to reduce paperwork for users; and
- to allow users to comply with health and safety law.

It achieves these objective by allowing users to produce site specific risk assessments and OSH statements which are recognised by the HSA. This web-based tool is fully interactive giving free access to Irish labour inspectors. It has become a trusted and confidential service offered to businesses. Users simply access the BeSMART web page (www.besmart.ie) and once registered, are very carefully guided through the production of a risk assessment for their chosen workplace. The product is an interactive risk assessment, accompanied by an OSH statement that is downloadable. BeSMART contains self-prompting features to monitor, review and when necessary expand the risk assessment. A host of educational, instructional and further links involving OSH risk assessments are also available on the platform.

The BeSMART model can be described as a sophisticated checklist or template model. There is nothing wrong with this per se, as checklists are the most popular form of risk assessment methods used (Clift et al., 2011; Neathey et al., 2006; Walters & Wadsworth, 2016). However, checklists do have strengths and weaknesses. Whilst they are easy to use, require little training, and can be conducted quickly they also have drawbacks. For example, the International Labour Organisation (ILO, 2017) list some 15,000 phrases in their OSH thesaurus indicating the scale of possible hazards present in modern day workplaces. Checklists can only cover a certain fraction of these hazards, even if BeSMART does prompt users to consider further relevant risks. Furthermore, their very simplicity does not lend checklists to complex and interrelated hazards. There is also a difficulty from users, who are not competent in this discipline, to interpret complex science and engineering-based OSH recommendations using checklists only (Clift et al., 2011; Neathey et al., 2006; Walters & Wadsworth, 2016).

Furthermore, BeSMART does not have any codified legal standing. Currently the HSA have a clear regulatory and professional practice policy when visiting enterprises that have used BeSMART as part of their OSH management system. Very simply put, inspectors will regulate all businesses visited in the same way by inspecting and reading site specific documents, including risk assessments and OSH statements. Those businesses found to have engaged with the BeSMART platform during visits are regulated in the same way as those that have not. Hence, there is no regulatory advantage or discretion currently shown to BeSMART users.

2.2 Target groups

The SME sector was chosen for very practical reasons. In 2010, the HSA was already heavily engaged in regulating the construction and agri-business sectors which were resource intensive in terms of the number of inspectors required.

Even though SMEs constitute over 99% of all Irish businesses (SBA Fact Sheet Ireland, 2016) this sector as a whole had not been specifically targeted. According to the SBA Fact Sheet Ireland (2016), the total number of SMEs in 2016 was 160,000. The use of a web-based tool was therefore considered an efficient way of reaching the widest possible number of SMEs, using the limited resources available within the HSA.

Currently, BeSMART covers seven SME sectors, namely retail, hospitality, manufacturing, private healthcare, childcare, food service, and beautician services, with micro businesses being the biggest users. In addition, the larger agri-business and construction sectors are also catered for. There are 475 separate risk assessment templates available for around 300 business types that vary from accountancy and acupuncture to woodworking and youth services. A full listing of these 300 business types can be found on the website (www.besmart.ie).

2.3 Developmental history and staff resources

The work to design this web-based tool began in 2010. In conjunction with the software development company, the design of BeSMART evolved using six dedicated inspectors. This initial phase took some 12 months. The software development costs to launch BeSMART online were approximately EUR 30,000. Currently, one senior inspector, three inspectors and one administrative staff member are employed full-time to run the entire BeSMART operation.

2.3.1 Breakdown of staff work load

The breakdown on staff time is roughly one third on developing, monitoring and reviewing content, one third on promotional activities and one third on interacting with users.

Developing, monitoring and reviewing content

The BeSMART team are continually analysing content in order to foresee any potential problems and considering new material to be added to the platform in order to improve the content. With four experienced inspectors on the BeSMART team, each with their own OSH background discipline, there is no shortage of new material to be considered. The issue of what new content to upload is the main discussion point. There is a constant balance to be met between simplicity of use and the adequate control of identified hazards. This balance is not easy to achieve and takes up a good deal of inspectors time.

Promotional activities

The BeSMART team are responsible for all marketing and promotional activities. Such activities include pro bono half or full day presentations of BeSMART to employer and employee groups nationwide. These presentation opportunities are actively sought out by the BeSMART team and the wider HSA team. Any approach by potential users will be positively responded to with the offer of a free presentation and demonstration at a venue of their choosing. The remaining labour inspectors are also expected to raise awareness of BeSMART during their daily work activities. There are also opportunities for those inspectors who are involved in education to promote BeSMART. In Ireland BeSMART is included in the curricula of all major health and safety related educational programmes at undergraduate and postgraduate levels. The result of all this promotional activity by the BeSMART team is substantial. In 2016, the total number of promotional events undertaken by the BeSMART team was 56, representing just over one every week.

Interaction with users

The third area of workload is interaction with users. BeSMART has been designed to be very interactive and this means the team is constantly helping and advising users. This interaction with users is conducted within a trusted and confidential environment. Users are thereby reassured that by contacting the HSA, they are not prompting an unwanted visit from the regulator.

2.4 Operational costs and resources

Annual running costs for BeSMART's software development and maintenance are currently in the region of EUR 10,000. These running costs are therefore relatively minor when compared to the human resource investment from the HSA in the four inspectors and one administrative staff member allocated to the BeSMART team. There are currently around 50 field based inspectors working for the HSA in total. Within this existing personnel resource, the regulatory control of the construction, agri-business and chemical industries requires a constant high proportion of inspector time. In addition, there are the normal demands on inspector time from complaints and requests for visits by both members of the public and employees. In addition, there are planned initiatives each year targeting specific sectors and in recent years construction, agriculture and manufacturing have all had interventions requiring a set number of businesses to be visited by inspectors.

Allocating four inspectors solely for the BeSMART function is a significant commitment of human resources, for a regulatory body with budgetary constraints. Therefore, the BeSMART initiative remains a particularly well-supported function by the HSA.

2.5 Future adaptations planned

Whilst the BeSMART team have identified potential future adaptations, implementation of these initiatives are currently restricted due to a lack of resources. Should resources become available, more educational video content, a public sector work sector initiative, a possible mobile application and an expansion into OSH management are included as priorities for implementation.

3 Results

3.1 Quantitative results

BeSMART has been very successful in reaching the Irish SME sector in terms of providing a free, validated and trusted method of producing risk assessments and OSH statements. In 2015, Ireland had over 160,000 SMEs with some 90% being classified as micro enterprises (SBA Fact Sheet Ireland, 2016). In 2017, BeSMART had reached over a quarter of all SMEs with approximately 43,000 registered users.

Consider that in 2013, the number of EU businesses stood at some 21.6 million. (EU-OSHA, 2017). The number of EU labour inspectors has been estimated at about 20,000 and they conduct some 1.5 million inspections per year (European Commission 2014). Therefore, there are somewhere in the region of 20 million EU businesses per year that are not inspected. This low rate of SME coverage has been widely reported (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016; Tombs and Whyte, 2013).

If the EU's estimated 20,000 labour inspectors were to fully implement web-based tools, then contact with the EU's 21.6 million businesses would become possible. The BeSMART figures demonstrate that one inspector can interact with over eight SMEs on a daily basis. It is therefore very clear that BeSMART, and other similar web-based tools, represent serious and feasible strategies to increase regulatory OSH coverage for the EU's SME sector.

There is also a cost saving to users, which, according to the HSA, is estimated to be between EUR 31-45 million. The BeSMART team report that this cost saving is derived, in its entirety, from businesses not needing to hire OSH consultants to produce risk assessments and OSH statements. The HSA estimate the cost of hiring OSH consultants to produce risk assessment and OSH statements for SMEs since 2011 to be between EUR 1,000-1,500 per company. In 2016 alone, the HSA estimated the cost savings to be around EUR 11 million. Finally, the number of users has grown each year since BeSMART's inception in 2011.

3.2 Qualitative results

BeSMART has been universally praised by the Irish Government, Irish business leaders, social partners and users expressing their approval of BeSMART. All such statements are routinely collated by the BeSMART team and a selection are reproduced here. The HSA policy is to seek consent from those expressing approval prior to publishing. All the statements below therefore have consent for publication and are archived in the HSA databases.

Ministers Ged Nash and Richard Bruton have both praised BeSMART for its utility to the business sector. Mark Fielding, the Director of the Irish Small Firms Association is also on record in 2015, in praising and recommending BeSMART.

BeSMART has also received national and European awards. The Irish Times newspaper awarded BeSMART a business innovation award in 2014. Dr Peter Dröell, from the European Commission Directorate-General for Research and Innovation commended BeSMART in 2015.

Users have also reported similar high levels of satisfaction as the following quotes illustrate:

'a valuable initiative, something that we will be promoting amongst our customer base' (insurance provider)

'BeSMART is an absolute godsend!! Great so simple to use and easy step by step instructions' (publican)

'BeSMART is a wonderful innovation and is an extremely helpful tool for helping any small business in assessing their business specific risks' (food ingredients manufacturer)

The BeSMART team themselves are also very proud of their achievements. One member of the team stated that;

'BeSMART is the shining light of our interventions. It is our inspectorate's most successful programme undertaken'

Part of the BeSMART team's duties also involves monitoring the perception of utility amongst users. Each year an electronic survey of 500 users is administered. To date the results have been very positive. The last user survey conducted in 2016 demonstrated that 95% of respondents were highly satisfied with BeSMART. OiRA has demonstrated similar positive feedback. 94% of OiRA users reported the tool meets their needs and 95% of users would recommend the tool to others (OiRA, 2017).

4 Difficulties and constraints

The success of BeSMART is evident and has allowed the HSA to very effectively reach, interact and influence a sector that has been resistant to OSH interventions in the past (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016). However, difficulties have arisen with its use and these are discussed below.

4.1 Evaluating resultant OSH standards

One difficulty with BeSMART arises when attempting to empirically evaluate its effect on SME OSH standards. Without an appropriately designed research programme, the actual effect of models such as BeSMART and OiRA on OSH standards remains speculative. The simple question here is: does using BeSMART result in compliance with OSH related legal requirements? Whilst cost savings, ease of use, interaction and the promotion of risk assessment are evident with BeSMART, the direct effect on workplace OSH standards remains open to debate. It could well be that using web-based tools, such as BeSMART, simply increases the quantity, but not the quality of labour inspectorate interactions, or risk assessments, with SMEs.

The literature evidence in this area is scant. Walters & Wadsworth (2016) contains a literature review of those SME OSH interventions conducted in the EU. The authors report that there are very few credible studies that have evaluated the effect of OSH interventions for the EU SME sector. Furthermore, these studies have not yet returned generalisable results identifying what works and what does not. Similarly, a Cochrane Library review of the effect of inspections published by Mischke et al. (2013) concluded that 'inspections decrease injuries in the long term but probably not in the short term'.

Therefore, in the absence of a research programme, it is simply not possible to accurately evaluate the actual effect that web-based tools such as BeSMART and OiRA have on OSH standards. Whilst Governmental, business, social partner, user and inspectorate views have been very positive, it remains that the actual ability of BeSMART and OiRA models in preventing accidents and ill health has not yet been scientifically evaluated.

The wider problem of evaluating the effect of current risk assessment policy is not confined to BeSMART. This is an issue which is common to the general practice of risk assessment itself and in particular with how risk assessments are conducted. There are many published methods describing risk assessment methods (see for example Gould et al., 2005, IEC/ISO 31010, 2009; Mariken et al., 2013; Marhavillas et al., 2011). However, there is little consensus on which methods to use (Aven, 2011; Hrymak et al., 2015; Johansen & Rousand, 2015).

Even so, there is no clear alternative to the utility and preventative ability of risk assessment (Aven, 2011) and EU usage is on a large scale (Wadsworth & Walters, 2014) with 88% of UK and 72% of remaining Member State businesses regularly conducting risk assessments. However, the smaller the enterprise, the less likely risk assessments will be conducted (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016). Furthermore, there is little standardisation as to how to conduct risk assessments (Aven, 2011; Hrymak et al., 2015), resulting in large variations in the hazards identified by individual assessors.

4.2 Balancing ease of use and complexity

There is the ongoing difficulty as reported by the BeSMART team, of maintaining an appropriate balance between the complexity of hazards being controlled and the required simplicity of the risk assessments produced. The advice from the BeSMART team on this delicate balance, is to err at all times on the side of simplicity.

Keeping content as simple as possible is a constant theme from the BeSMART inspectors involved. The disadvantage of this strategy is the uncertainty about

whether the control measures produced by the risk assessments are adequate for the hazards under analysis. This balance is well summarised by the risk assessment scholar Le Coze (2015) who states that in order to fulfil their accident prevention role, risk assessments cannot be so simplistic so that all they produce is a generic hazard listing for selected workplaces. At the same time, the methods used cannot be so complex as to be time consuming, expensive and requiring specialist professionals.

Another difficulty is whether BeSMART is simply being used to show compliance on paper but not in practice. Using the interaction provided by the HSA, BeSMART users undoubtedly have the capability to ensure successful risk assessment conduct and thereby comprehensively manage OSH risks in SMEs. However, it will take an appropriate research programme to evaluate the prevalence of superficial compliance compared to adequate control of workplace hazards. The BeSMART team also report on the difficulty of promoting BeSMART to new users. They state that BeSMART must be sold to users. The team further report that trust is an issue, with user confidentiality being a theme that needs to be constantly reinforced to potential users.

There is also the difficulty of forecasting future market share. BeSMART has demonstrated successful access to about a quarter of Irish SMEs, but three quarters remain. If uptake remains at the same rate it will require another decade to reach the remaining SMEs. In short, only time will tell if BeSMART's impressive growth will continue.

There is also the overarching difficulty of maintaining an appropriate balance between social protection and the free market. It has long been shown that credible enforcement works. When regulation is absent or considered 'light touch' accidents will occur (Tombs & Whyte, 2013). The Macondo oil well explosion in the Gulf of Mexico in 2011 is a prime example of the detrimental effect a 'light touch' regulatory approach can have (US National Commission, 2011). There is a difficulty here in that web-based tools such as BeSMART may be used politically to replace legally based traditional and credible enforcement activities.

4.3 Dealing with psychosocial risk assessments

In terms of risk assessing psychosocial hazards, the BeSMART team realise that the nature of such risks do not easily lend themselves to a straightforward identification and evaluation process. Therefore, the team has taken a pragmatic approach in this area, by offering policies and general advice rather than assessing such risks. Hence, BeSMART links to external providers of bullying, harassment and stress policies and advice (for example see http://www.workpositive.ie) rather than trying to evaluate these psychosocial hazards directly.

4.4 The legal position of BeSMART produced risk assessments

There is a societal expectation (Woodcock, 2014) that labour inspections are conducted appropriately. Yet as Reason (1997) points out, and as any experienced labour inspector will attest to, the regulator's role is not easy. Woodcock (2014) states that there is an assumption of accuracy in terms of identifying hazards when any inspection is conducted, be it by a Government appointed labour inspector, or an OSH consultant. However, as Aven (2011) and Johansen & Rousand (2015) report, risk assessment remains an ambiguous concept without standardisation. This area of OSH also has scant research but an understanding of the problem can be seen in a German study by Lenhardt & Beck (2016) that questioned the quality of risk assessments. The fundamental problem is a lack of standardisation on how to conduct risk assessments meaning that different inspection methods and different inspectors will give rise to different results (Aven, 2011; Hrymak et al., 2015).

In some European countries, the professional standard required for competence is codified. For example, in Ireland under Section 2.2a of SHWA 2005 competence is defined as a person possessing "…sufficient training, experience and knowledge

appropriate to the nature of the work to be undertaken". However, it remains vague and only clarified during judicial cases where the role of the OSH risk assessor is investigated. For example, Lockhart (2011), a judicially appointed coroner, was scathing of the professional conduct of a Scottish OSH consultant. This OSH consultant was found to have missed the causative hazards that resulted in thirteen fatalities in a nursing home fire. Labour inspectors due to their professionalism will know well the requirement to identify hazards during inspections and just how difficult this task is. They also know well the potential consequences of missing hazards during inspections. The limited research available on accuracy reveals inspection to be an error prone task (see for example Albert et al., 2014; Moore, et al., 2011; Hollis & Bright, 1999).

So there could be a difficulty in the legal standing of BeSMART and OiRA generated risk assessments in that users may be given a false impression of their legislative compliance. This can occur if users have unknowingly *not* identified all workplace hazards and a serious accident or a fatality occurs as a direct result. In Ireland and the UK the standard for what workplace hazards should be identified during inspections falls under the overarching legal concepts of negligence and duty of care (Tomkins, 2010). In these two jurisdictions, risk assessments must identify all hazards that are 'reasonably foreseeable' (Tomkins, 2010). Similarly, Article 5 of the Council Directive 89/391/EEC of 12 June 1989 allows for the limitation of employers' responsibility in unforeseeable circumstances. So the question remains, if the users of BeSMART and other similar web-based tools *do not* identify all workplace hazards that are 'reasonably foreseeable' what are the consequences?

It is doubtful that BeSMART users, and users of other similar web-based tools, could reach this high bar of professional conduct whereby all reasonably foreseeable workplace hazards are identified due to an inherent lack of OSH expertise (Walters and Wadsworth, 2016). BeSMART was never intended to replace the professional risk management experience that labour inspectors and OSH specialists have. BeSMART began as an initiative to positively influence OSH in a hard to reach sector. Furthermore, some scholars (Blewett & O'Keeffe, 2011; Wadsworth & Walters, 2014) raise questions over the existing competency of many OSH consultants and the overall conduct and quality of their risk assessments remains problematic.

A potential difficulty could therefore arise should a serious accident or fatality occur and the subsequent legal inquiry concludes that the BeSMART generated risk assessment did not appropriately identify or control the causative hazard or hazards. In such cases, it is likely that any defendants will be citing the BeSMART interaction in their legal defence. Regardless of the outcome of such court cases, there could well be negative publicity generated for BeSMART. This issue will be resolved if such test cases arise but it would be most prudent to obtain professional legal advice in the interim, so that any necessary limitations in terms of liability are fully understood by labour inspectorates and users.

4.5 Effective content communication

The BeSMART team themselves have highlighted a number of issues that they would like to see improved but resources remain an issue. Although there are no plans to hire additional inspectors for BeSMART, the team would like to see more visual communication as part of the platform's content. More information on how users can conduct inspections for risk assessments is also reported as being beneficial.

4.6 Perceived negative effects on inspectors and consultants

The BeSMART team have reported that they have actually generated work for themselves in terms of the interaction produced with users of BeSMART. However, they recognise that such platforms may be viewed as potentially removing labour inspector duties. Similarly, OSH consultants may feel their business opportunities may be reduced by the fact that BeSMART usage is free.

5 Success factors and transferability

5.1 Successes

As a method for labour inspectorates to reach and interact with the SME sector, there is no other enforcement paradigm that can show such efficiency. A team of four full-time labour inspectors with one administrative staff member have demonstrated that they can interact with over 8,000 SMEs a year and ensure the production of some 140,000 risk assessments and 7,000 OSH statements. BeSMART has also saved Irish businesses between EUR 31-45 million in the cost of complying with OSH risk assessments through a free, interactive, confidential and trustworthy web-based platform.

BeSMART has clearly demonstrated the economic case for the use of web-based tools for OSH risk assessments. No other method of regulation demonstrates such economic efficiency in producing SME based OSH risk assessments. BeSMART can therefore be viewed as representing exceptional value from Member State Labour Inspectorates, whilst also reducing burdens for SMEs.

A further potential strength of BeSMART is the opportunities it brings for European OSH regulation. One of the great regulatory challenges that has always faced advanced market economies is achieving an appropriate balance between the social protection of its inhabitants and workers, whilst allowing the operation of the free market.

Too little regulation, as is often seen, will result in increased accidents, ill health and financial loss to both workers and businesses (Tombs & Whyte, 2013; Walters and Wadsworth, 2016). Too much regulation is similarly seen as problematic, being perceived as contrary to job creation and an unnecessary burden on business (Business Regulation Forum, 2007). By achieving almost universal praise from users and the business sector in Ireland, BeSMART has demonstrated one example where the balance between adequate social protection and operation of the free market can be agreed.

The interaction between labour inspectorates and BeSMART users is also a success. Rather that engage in a formal site inspection and enforcement role, which is often confrontational and legalistic, BeSMART inspectors are acting in a totally advisory and educational role. The beneficial results of this are clear. From 2011 to 2016 over a quarter of all Irish SMEs produced risk assessments and OSH statements using BeSMART. Figures from the last decade, prior to the BeSMART era, show that compliance with the production of risk assessments and OSH statements in the SME sector was far lower with some sectors showing percentage compliance in single figures.

Another success for BeSMART is in the standardisation of required documentation and conduct. The BeSMART platform offers the distinct advantage of a labour inspector validated method of producing risk assessments and OSH statements. The problem with the current lack of standardisation centres on how exactly to conduct risk assessments. This remains a particular problem (Aven, 2011; Hrymak et al., 2015 Lenhardt & Beck, 2016). Another success that BeSMART confers is editorial control over recommended guidance by the labour inspectorate. Given the plethora of health and safety advice, labour inspectorate validated health and safety information and advice is a valuable advantage for users.

A particular strength of BeSMART is that it can also expand labour inspectorate interaction into OSH management and education. There is no reason why the BeSMART model cannot be developed to provide the full range of OSH management system documents, to link with already produced risk assessments and OSH statements. In this way BeSMART can provide a free, and completely auditable OSH management system. Adding online training modules to cover all relevant chemical,

physical, biological and human factor hazards will also complete the BeSMART package.

5.2 Transferability

There does not seem to be any impediment to transferring a BeSMART informed model to the wider European SME community that does not utilise OiRA or other similar web-based tools. In this regard, three particular lessons have emerged from the BeSMART team when considering transferability. Firstly, BeSMART must be sold to businesses. This involves a great deal of promotional work by the inspectors involved. Secondly, trust is paramount for users. Confidentiality must be reinforced at all times with users. Thirdly, the content must be easy to use and simple.

Transferability to all risk related educational programmes is also possible. There is no reason why educational curricula across the EU cannot include OiRA and BeSMART on their reading lists if not directly listed in their syllabi.

5.2.1 Lead authority role

Due to the success of BeSMART, the HSA could have a leading role for web-based tools and OSH risk assessment. The BeSMART team are already advising Iceland and Norway with their web-based tools initiative and the positive experience that the BeSMART team possesses should be more widely disseminated.

6 Key findings and conclusions

BeSMART is currently working very well in Ireland and has been very successful at reaching the SME sector. This sector, as with its European counterparts has traditionally been resistant to OSH initiatives (Lenhardt & Beck, 2016; Walters & Wadsworth, 2016). The ability for web-based tools such as BeSMART to reach this sector, clearly demonstrates its utility. There is little doubt that BeSMART and other similar web-based tools should continue in their current role. There is also a strong argument to say that given the success of BeSMART, such initiatives should receive additional and significant resource support. Since the Framework Directive was introduced, there have been no other health and safety initiatives that have achieved this level of interaction with the SME sector, whilst at the same time using so few labour inspectorate resources.

BeSMART has also demonstrated a clear burden reduction on businesses. SMEs have been provided with an easy to use, free, trusted and interactive method to produce risk assessments and OSH statements. It is estimated to have realised between EUR 31-45 million in savings for Irish businesses since 2011. It has therefore complied with a key aim of the free market whilst retaining a clear social protection role.

There are drawbacks with BeSMART and other similar web-based tools which revolve around how to increase user numbers and evaluating just how effective they are in preventing accidents and ill health for users. There are further difficulties in considering how such web-based tools will be viewed in judicial proceedings and how they can be used for enforcement purposes.

Furthermore, increasing usage and linking BeSMART and other similar web-based tools to enforcement will need research programmes to fully evaluate utility. Whilst this Peer Review will present potential opportunities for enforcement activities linked to web-based tools for OSH risk assessments, the European Commission is strongly advised to consider dedicated research funding. This should be aimed specifically at supporting and extending BeSMART and other similar web-based tools initiatives in general. In this regard, it is essential to conduct further research into the following aspects:

- What motivates companies to become (or not become) BeSMART users?
- What effect does BeSMART have on workplace OSH standards?
- How can BeSMART and similar models have legal status conferred that will include liability issues for labour inspectorates?
- How can OSH management functions be incorporated into BeSMART type models?
- How can BeSMART type models be incorporated into the wider ILO, ISO and similar standards for risk management?

In summary, this discussion paper asks the question; can web based tools help OSH regulators with the need to increase risk assessment within the EU SME sector. This question will be rigorously debated using the expertise of the attending officials and experts, many of which will have first-hand experience of inspecting businesses and enforcing national OSH standards. They are very well placed to inform this debate and influence future policy for the socially and economically important role of EU OSH regulation.

To begin the debate on how the utility of tools such as BeSMART and OiRA can be improved and how they could be used for enforcement, Peer Review participants were asked to complete a nine question semi-structured interview protocol. 20 responses (around half of all participants) were received and the succinct findings are presented below:

- Web-based tools were seen as very useful for SMEs in meeting their OSH needs and thereby require additional promotion and support.
- The delegates saw web-based tools as advisory and educational in nature and did not recommend web-based tools to be embedded into legislation.
- The only negative aspect to web-based tool use was the challenge of increasing user numbers.

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