2006

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Anthony Davies
Cardiff University

Ceri Evans
Cardiff University, c.d.evans@bangor.ac.uk

Martin Parfett
Cardiff University

Andrew Emery
Cardiff University

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Anthony Davies, Ceri Evans, Martin Parfett & Andrew Emery

eCommerce Innovation Centre, Cardiff Business School, Cardiff University, United Kingdom
c.d.evans@bangor.ac.uk

Abstract

Very little has been published on best practice approaches to managing eBusiness change for SMEs, particularly at the level of the small business. SMEs are however increasingly implementing more advanced eBusiness solutions, and in turn could benefit from adopting a more informed manner to taking on some of these change management challenges. This potentially has implications in terms of the long-term cost of implementing eBusiness change, and has relevance to future uptake of eBusiness. This exploratory paper presents work conducted as part of the Opportunity Wales Advance Welsh eBusiness support initiative. It focuses on understanding more about issues related to the management of staff in SMEs when moving forward with eBusiness change. The paper concludes there is need for firstly, greater consideration of these softer skills in eBusiness training, and secondly, a more integrative approach to eBusiness change management training and education – rather than eBusiness and change management being considered as separate disciplines. The case study approach used in this paper also presents a number of interesting examples of the change management challenges that can arise, and illustrates how the SMEs overcame these.

Keywords: SMEs, eBusiness, Change Management

1. Introduction

Whereas in the past much has been published on how to go about managing eBusiness change for large businesses, in contrast, little has been written on how it might apply to SMEs, particularly small and micro businesses. Perhaps this is not unsurprising, given that until recently, most SME implementations have involved getting connected to the Internet, and exploiting basic uses of eBusiness.

SMEs are however beginning to adopt ever more advanced solutions, and policy makers, funding and advisory bodies, are responding by moving away from promoting awareness, and basic use of eCommerce, to more sophisticated usage of eBusiness. Indeed, there is much talk of transforming SMEs into "e-companies", by integrating eBusiness into normal business (Commission of the European Communities, 2003). This is often

1

referred to on the much used eBusiness 'adoption ladder', as the "business transformation" level – the highest point on the ladder.

With the implementation of more advanced eBusiness solutions, there is evidence to suggest it has a more complex impact on SMEs in terms of changes to a number of dimensions, including people, processes, organisational structure, business models and technology. In such circumstances, the effective management of change becomes ever more important, and may prove increasingly necessary to help SMEs move forward efficiently and effectively up the aforementioned eBusiness 'adoption ladder'. It is argued these skills should not be confined to the domain of the resource rich, large business, as has historically been the case.

When also considered in the context of the continued growth in uptake of broadband – a catalyst for eBusiness related change – possibly the need for these skills become even more acute. Research evidence has shown that a lack of change management skills have proved major barriers to fully exploiting broadband connectivity in Welsh SMEs (Evans and Davies, 2004).

Indeed, it is against this backdrop that the research detailed within has been conducted. The Opportunity Wales Advance project, funded by the European Regional Development Fund, aims to encourage and assist Welsh SMEs in taking on more challenging applications. As part of the initiative, an annual Welsh State of the Nation report is produced, and has shown that although many SMEs remain at fairly low levels on the 'adoption ladder', others are moving forward significantly (eCommerce Innovation Centre, 2005).

For some Welsh SMEs, it is perhaps not unrealistic to say that eBusiness related change, could equate to the most radical transformation in their methods of working since inception. Given this, and the need to move SMEs forward with eBusiness as part of the Opportunity Wales Advance project, it was felt there was a need to explore some of the eBusiness change management issues they face, and gain insights into whether they would benefit from training and education in this area. It was proposed the latter could potentially form a part of the next generation of eBusiness support to SMEs in Wales.

It was considered too ambitious to cover the whole spectrum of eBusiness change management, or attempt to investigate the factors that help determine eBusiness based change failure or success. Instead, it was decided at an early stage to focus specifically on understanding more about issues related to the management of staff in SMEs when moving forward with eBusiness change, particularly with regard to communication. This was something the literature suggested is an important element in successful change.

Consequently, the research aimed to gain insights into 3 main "themes":

• Those responsible for initiating, managing and promoting eBusiness Change;

• The nature and timing of communication with staff during eBusiness change, and the implications of this;

• The methods SMEs use to prepare staff for eBusiness change.

eBusiness change management as far as this paper is concerned, is therefore seen to be the process of reducing resistance to change and increasing commitment to it. A key objective of the work, in addition to those listed above, was to identify areas for further research.

Semi-structured in-depth interviews, together with desk based research, have been used in this preliminary investigation. The standard OECD definition of eBusiness has been adopted: "automated business processes, both intra- and inter-firm, over computer mediated networks" (Roberts, 2004). Although clearly this paper relates to Welsh

experiences, it will provide input relevant to anyone investigating eBusiness within SMEs.

2.   Literature Review

Most literature in the field of eBusiness change management focuses on large businesses – these publications very clearly advocate the benefits of effective change management, particularly in creating "e-companies". Kalakota and Robinson (2001), for example, state that "the creation and implementation of an eBusiness project is inextricably linked to the management of change". Furthermore, research by Clegg et al (2005) suggests that effective development of eBusiness requires understanding of the interplay between people, process, organisation, business models and technology. They assert that management of this change is one of the key socio-technical issues that arise with eBusiness innovation. Jackson and Harris (2003) are also of a similar viewpoint, and make particular reference to the need for personnel to buy-in to any change. Singh (2004) emphasizes that organisations can get blinded by technology, and consider people factors after implementation, rather than devoting considerable time to it from initiation.

2.1   Initiating, Managing and Promoting eBusiness Change – Responsibilities

There is strong support in the literature for developing a change management team to help move forward an eBusiness change project. This team typically includes a "project leader" jointly responsible for initiating eBusiness change, and management of it. The person is usually someone who has authority in the business, and will be an active and visible supporter of change (Hartman, 2002). According to Singh (2004) this individual will have sufficient knowledge to decide who should be involved in the decision making. There is also widespread backing in the literature for having eBusiness 'champions' who can help build commitment to any change process, and help sell the idea. These people are knowledgeable on the subject, use energy, and are passionate about the change (Doyle, 2002). They can be the project leaders. In larger firms, there may be a need for representation from each functional area, whereas in smaller businesses a few people with cross-functional knowledge may be sufficient.

2.2   Communicating eBusiness Change to Staff

Hawking, Foster and Stein (2004), assert that communication and strong leadership play a vital role in eBusiness change. In particular, early meaningful communication with employees, especially the "users", is seen as imperative to help prepare them for change, and to benefit from their feedback. As Zairi (1992) puts it "communication of the technology idea shouldn't be a process of telling or informing, but a mutual process of exchanging ideas, thoughts and sharing of anxieties, fears and reservations".

Lin, Cripps and Bode (2005), revealed in their study that very few SMEs had taken steps to manage eBusiness change and involve users in the designing and adoption phases. Employees and users complained about not being consulted about the eBusiness projects adoption, as well as not being involved in the early selection of the systems. Indeed, according to Chan and Swatman (2003), the most crucial part in the change process involves diffusion and acceptance of the system. Alongside involvement in the change, and an understanding of its impact, employees must also see the need for change.

Clearly leadership style will have a strong impact on the approach to communication. One model of change leadership used with eBusiness and change management in the past

is the Dunphy and Stace matrix (1994) – they identify four different categories of change leadership:

– Extensive employee involvement in key eBusiness decisions (*collaborative*);

– Management make a final decision on eBusiness change, only after gaining some feedback from employees (*consultative*);

– Managerial authority is used to make eBusiness change decisions, and is generally well accepted (*directive*);

– Employees are made to accept eBusiness changes regardless of their opinions on the issue (*coercive*).

Although there has been little published in this area, research by Cope and Waddell (2004), highlight the value of a consultative, rather than coercive leadership style for eBusiness change management.

Research evidence suggests good communication and regular consultation with employees is also key to limiting resistance to change, particularly as "employees do not resist change per se; rather they resist the uncertainties and the potential outcomes that change can cause" (Waddell, 2004). Of course, resistance also has a positive role in drawing attention to aspects of change that are not well thought through.

Resistance to some degree is inevitable, given that changes in business processes can cause jobs to be redefined, new jobs to be created, lines of authority to change, and departments and teams to be dissolved, or restructured. Indeed, Jackson & Harris (2003), assert that re-design of business processes and structures involves significant social redesign, and that the changes will always be open to disturbances and threats.

2.3   Preparing Staff for eBusiness Change

Wargin and Dobiey (2001) suggest that the two principal reasons why people resist new technologies, is because they don't have the skills to use and gain benefits from them, and because they lack understanding as to how it changes how business is done and processes are executed. Clearly one of the key means of overcoming this, and preparing staff for change is to provide adequate training at both these levels. As Singh (2004) puts it "training and development programs for eBusiness projects should be aimed at developing all those affected by it". Many other studies emphasize the importance of developing appropriate skills and understanding through training and education.

3.   Research Approach

After having reviewed the literature on eBusiness change management, a semi-structured interview framework was developed to help address the research objectives identified earlier. These questions covered a range of issues including how the planned eCommerce developments were communicated internally, and how staff were prepared for any changes in job roles that may have been required. A series of in-depth face-to-face interviews were conducted with a senior manager at each of the eight Welsh SMEs used for the purposes of this exploratory research.

A number of businesses agreed to take part, following a letter seeking their participation, and were chosen randomly from the Opportunity Wales Advance client database. These businesses were representative of the diverse SME base in Wales, and comprised of both newer and more established companies, micro businesses and larger SMEs, as well as a good mix of business-to-consumer and business-to-business operators. Significantly, they were also at varying stages of eBusiness development, and from a variety of industry

sectors. For this paper the authors have used the European Commission definition of SMEs as employing less than 250 people.

4.   Research Findings

A number of interesting findings emerged from the analysis of the interviews with the businesses in Table 1. These are presented below according to the main themes detailed earlier using a case study approach. Whilst there is some consistency with the literature, there are also some notable differences.

In order to measure the use of eBusiness at any point, an eBusiness ladder has been devised for the Opportunity Wales programme, in a similar vein to the eBusiness 'adoption ladder' discussed earlier. The steps in the model (as referenced in Table 1), are illustrated in Table 2.

Table 1: SME profiles

	Business Description	Industry Sector and Customer type	Size	Age	Position on eBusiness ladder	Time using eBusiness (approx)	Use of eBusiness/IT
Company 1	Direct and mail-order sales of Health and Safety Training materials, and posters.	Retail Mainly B2B	£1.6m T/O, with 20 employees	Est. 1995	5	8 years	Web site was first developed in 1997/1998, although customers couldn't pay on-line until 1999. There is a company Intranet, and their back office systems are fully automated.
Company 2	Sells bespoke timber buildings.	Retail Mainly B2C	£0.5m - £1m T/O, with 5-9 employees	Est. 2001	2	4 years	Basic Web site serves as a marketing tool. Broadband used to help transmit large files by eMail between offices.
Company 3	Self-catering accommodation provider.	Tourism Mainly B2C	£0.05m - £0.1m T/O, with 2-4 employees	Est. 1998	3	3 years	Basic brochure Web site, with on-line booking and payment. Regular use is made of eMail.
Company 4	Producer and distributor of home made pies and pâtés etc.	Manufacturing Mainly B2B	£1m - £2m T/O, with 37 employees	Est. 1981	4	7 years	Web site with on-line store. eMail used for communication. Company Intranet.
Company 5	Provide a range of engineering services to industry - design, installation, servicing and maintenance.	Services B2B	£3m - £9m T/O, with 50 – 99 employees	Est. 1989	4	9 years	Established Web site. Extranet facility has been developed, alongside an on-line database for use with a key customer in order to replace a paper-based system. eMail is used regularly internally and externally.

Company 6	Estate agency, with 3 separate offices.	Services Mainly B2C	£0.7m T/O, with 15 employees	Est. 2001	3	4 years	Mature Web site has been available from inception. eMail marketing campaigns are run frequently. Various estate agency software is used.
Company 7	Installs and maintains fire equipment.	Services Mainly B2B and B2G	£1.4m T/O, with 27 employees	Est. 1974	2	4 years	Internet is used for research and eMail is used regularly. A satellite tracking device is in use with their mobile engineers. In process of implementing a system where engineers will be able to communicate real time job status info. via hand held Pocket PCs.
Company 8	Adventure and water-sports centre.	Tourism B2C and B2B	£0.25m T/O, with 5 employees	Est. 1995	3	4 years	Effective Web site, regular use of eMail.

Table 2: Opportunity Wales eBusiness ladder

Step	Title	Description
1	**Use eMail and the Web**	Uses eMail and other Web sites but does not have a business Web site.
2	**Basic Web site**	Acts as an on-line "leaflet" about the business, but for more information customers have to contact them.
3	**On-line brochure**	Can access information about products/services on the Web site, but cannot buy or pay on-line.
4	**On-line store**	Can buy and pay for products/services directly from the Web site, but the Web site is not linked to internal systems, and orders are processed manually.
5	**Integrated systems**	The on-line "store" is integrated with other business systems, e.g. order processing, fulfillment, accounts and/or marketing.
6	**Advanced eBusiness**	Internet technology drives the business internally and externally, and is used to manage all processes end-to-end more effectively and efficiently.

4.1 Initiating, Managing and Promoting eBusiness Change – Responsibilities

None of the SMEs in the study talked about forming a change management team to move forward eBusiness developments; despite this, there were some obvious parallels that could be drawn with the literature.

Those who initiated eBusiness change tended to be individuals with a high level of responsibility and authority, and general business knowledge. In the companies with over 10 employees, these individuals varied between the Managing Director, the Marketing Director, the Finance Director, and other directors. For the micro businesses, decisions on initiating (and managing) change would come from the owners. Although the above individuals will initiate eBusiness change, it is important to make the distinction that staff in some instances were the ones to suggest these changes in the first place.

There was a high level of consistency between those who initiate the change; and those who actually manage the eBusiness change process. Two of the businesses did however have separate 'initiators' and 'project leaders'. This was justified by the SMEs concerned on the basis that those who act as the 'project leader' should have strong IT/eBusiness knowledge, but that traditionally the uppermost level of authority would make the high level decisions to move forward in the first place. None of the businesses talked of these individuals actually having official 'project leader' status, although they were in effect acting as one. Interestingly, not one SME stated the IT manager would be responsible for this.

However, of those other members of staff who play a significant role in eBusiness change, the IT manager was mentioned on a number of occasions. Some of the SMEs also talked of bringing in expertise from different departments for their input when required. For instance, one mentioned setting up a working party involving various departmental managers to decide upon a satisfactory route forward.

The use of informal IT/eBusiness champions was an approach used by two of the businesses. Interestingly, both contract out their IT to an external company. The engineering services firm (company 5) for example used one of their electrical engineers (who had a high level of IT skill and eBusiness knowledge) to encourage other engineers to accept and use eBusiness methods.

With regard to the micro businesses, there was a less clear cut delegation of responsibility for eBusiness change, and a more open and informal working environment, where everyone with expertise can contribute. Perhaps to a certain extent this reflects the lower level eBusiness implementations they have taken on, and their flatter organisational structures.

4.2 Communicating eBusiness Change to Staff

On the whole, the SMEs involved their staff to varying degrees at the earliest possible stage in the eBusiness change process – the "planning stage" – prior to making any firm decisions about how to move forward, or the particular nature of the eBusiness change. Typically speaking, they were keen to give staff every opportunity to make suggestions, comments, concerns and criticisms. This approach is consistent with good practice literature.

As the Marketing Manager of the manufacturing business mentioned (company 4): "Before we move forward with any new eBusiness developments, we will bring it to the attention of the team in a meeting: What do you think, are you going to use it, and what would you want out of it?" Similarly, the Marketing Director of the Health and Safety training materials provider (company 1), said: "No one person can encompass it all, and

therefore it is vital to involve staff." Both of these approaches would fit the consultative leadership approach to change as advocated by Dunphy and Stace (1994).

The estate agency business (company 6), also adopt a similar approach, and hold informal team meetings to encourage comment and feedback. For example, the director of the company said: *"All our staff work around computers – they need to buy into any eBusiness related changes, before we buy into it. We need input from staff in answering key questions before moving forward. For instance: If we do this, is it going to create more or less work? We are prepared to 'bin' or modify eBusiness plans if staff haven't been supportive."* Clearly management consider it essential to tap into staff experience at the 'front-line' of the business so they can influence ways of working through eBusiness. Using the Dunphy and Stace model (1994), their leadership style would be characterised as somewhere between consultative and collaborative.

Another of the SMEs – the engineering services firm (company 5) – adopted a slightly different approach. Rather than using verbal communication to initiate eBusiness change, they would provide an eMail briefing to staff describing a proposed eBusiness development. This would also ask them to provide feedback on the plans, particularly in terms of how it could impact upon job roles, and result in time efficiency savings. Their leadership style was part consultative and part directive: the fact that management play a stronger role in dictating direction perhaps reflects the size of the company.

In stark contrast, the business specializing in fire protection (company 7), would only typically involve staff at the implementation phase, rather than at an earlier stage. This perhaps has a lot to do with the nature of their business, and the type of eBusiness implementation they were referring to. Many of their staff are field engineers who work remotely, and only visit the company offices 3 or 4 times a year. They work specifically on undertaking installation and maintenance of fire protection equipment, and don't have a detailed knowledge of day-to-day aspects of the company beyond their immediate areas of responsibility. A decision was taken by management to introduce a system which would allow engineers to communicate real-time job status information via pocket PCs, without consulting the engineers first. As the Operations Manager, mentioned: *"We would say to them: This is the way we are going – have you got any thoughts on it, and what are your likely training needs?"* The development meant vast efficiency savings, and improved cash flow; but would not provide obvious direct benefits to those required to adopt the new way of working. Their leadership style would fit the mould of the directive-coercive type. Interestingly, there is support for adopting this approach in such circumstances, i.e. where there is high urgency of change, combined with high resistance.

Indeed, with regard to resistance to eBusiness change, it was possible to draw some parallels with the literature. For example, the manufacturing business (company 4), were very aware of the need for meaningful early communication with staff, to help reduce anxieties, and ultimately resistance: *"We make an effort to ensure staff are aware eBusiness is something they can individually benefit from. For instance, in developing an Intranet facility, we made a point of emphasizing how much more convenient things will be for them. Historically, 'production' would need to contact a specific individual within the 'office' to print labels before product despatch, and this could prove frustrating when that person was away. However, we made it clear the new facility would allow them to do it without bottlenecks, and in turn this would give them greater responsibility."* At the same time, this example also proves that communication of the change should be tailored to specific departments/audiences depending on its likely impact on them.

The contrasting nature of the businesses proved particularly effective in illustrating how the requirement for carefully crafted communication and effective safeguards against resistance, can vary from one SME to another. For the health and safety training provider (company 1), resistance has never been a problem: *"We are a young company, with a*

young workforce, and have used eBusiness practically from inception, we also develop software as part of our work. Everyone tends to be proactive about eBusiness change, so long as it is positive for the company – they are aware how important eBusiness is to our competitive edge."

In contrast, the engineering services firm (company 5), are a much older company, with an ageing workforce, and consequently have experienced more in the way of resistance. Some staff, particularly the older ones, have continued to use paper based ways of working following implementation. Senior management have responded, by integrating use of eBusiness into job descriptions, as well as into annual performance reviews – purchasing staff for example are targeted to increase their use of on-line suppliers.

Similarly, the estate agency (company 6), had policies in place that support adoption of eBusiness, thus making resistance during the eBusiness change process less likely. These include an emphasis on IT and eBusiness skills in recruiting new staff, making it an important part of training needs analysis, and regularly testing employees for these skills.

For the micro businesses, the issue of effective communication was not so challenging given their small size. Although senior management would welcome input from staff, there appeared to be a zero tolerance policy to resisting eBusiness change, given business survival needs. One of the directors of the SME selling timber buildings (company 2) summed this up by commenting: *"With respect to resistance to change, there is no opportunity for it! We are a small company, and everybody's aware of the direction we need to go with eBusiness if we are to continue and prosper."*

4.3   Preparing Staff for eBusiness Change

In line with the literature, the main method of preparing staff for change was through training. This was either delivered informally in-house, or in a more formal fashion by external parties. Training would vary from IT/eBusiness training, to training in new systems and procedures.

In-house training typically involved a team meeting where staff would be fully briefed on how work processes and methods of working would change. This would often be followed up with some sort of documentation to set in stone these changes, such as a written procedure detailing a new ordering process, or more generally new work practice guidelines. One of the businesses mentioned how there tends to be one-to-one meetings with individuals where changes would have an affect on job roles. Interestingly, some of the SMEs mentioned how enthusiasm for eBusiness change was far more evident following appropriate training.

There was a noticeable difference between the larger SMEs and the micro businesses in their approach. In the case of the former, the businesses were proactive in assessing skill levels prior to implementation, and would address any shortcomings via appropriate training, again prior to going live. Conversely, the micro businesses tended to adopt a reactive approach, and take on additional training only after moving forward with eBusiness.

5.   Discussion and Conclusion

The exploratory research presented in this paper has been conducted as a pilot investigation. Clearly there are thus limitations in the research, particularly in relation to the generalizability of the research findings – the study involved eight Welsh SMEs, and the results should be considered in this context. Of course, a further limitation is the reliance on the responses of those interviewed. It is intended that further research will

delve deeper into some of the areas unearthed in this study, and will involve a larger sample size.

Despite this, there are some tentative conclusions that can be drawn from this work-in-progress. In particular, this work has highlighted that established businesses appear to find eBusiness change far more testing than newer ones: the older businesses in general experienced more problems than the other SMEs. As Jackson and Harris (2003) put it "while start-up companies can leap frog these problems, established ones face some difficult challenges". Boddy and Buchanan (1992) also assert that the greater the degree to which modifications mark a significant departure from existing ways of doing things, the more open they are to disruption and failure.

Most businesses are not start-ups that have adopted eBusiness from day one, but instead are traditional businesses that must take on new ways of working. It follows that perhaps established businesses would benefit most from further support in relation to good practice on managing eBusiness change – they must understand they can not just "bolt-on" this change. However, simply extolling the virtues of good change management practice per se, as some business support organisations in the UK have done may not be sufficient.

Instead a more integrative approach may be required, such that eBusiness and change management are considered together, rather than as separate disciplines. Drawing on some of the good practice that emerged in this study, it might entail senior management selling the virtues of a solution, rather than just telling staff what to do. At the simplest level, this may involve explaining to the sales department that an eBusiness implementation will mean filling out forms and looking for order status information will no longer be necessary, and thus there will be more time to spend on actually meeting targets.

Although clearly this advice is of a basic nature, and would appear to be common sense, the implication is that such approaches need reinforcing to management, particularly in an eBusiness context. Indeed, a study by Enterprise Ireland (2002) documenting the comments of 80 businesses that had made significant eBusiness investments emphasized "much of the advice that transpired was not related to technical issues, but to management of people and processes. Although some of the advice seems basic, many very-well managed companies still failed to observe it".

The findings from this work provide further support to existing studies that advocate the importance of adopting a socio-technical view of eBusiness. Indeed, research by Clegg et al (2005) asserts that education should be targeted at senior managers to incorporate not just technical issues, but also softer managerial and social issues which go beyond just how to operate eBusiness systems. There is however a need to ensure that any "change management speak" is pitched at a level SMEs can understand, and in a way they can comprehend its practical value. The latter again perhaps reinforces the need for an integrative approach: one that clearly illustrates best practice approaches to managing change in an eBusiness context. This possibly could be best appreciated through a case study based approach to learning.

As businesses move up the eBusiness adoption ladder, beyond simple eMail and a basic Web site, towards the "business transformation" level, there is perhaps a greater need for eBusiness change management education and training for the managerial community. If it holds true that SMEs perceive they will encounter difficulties in this area, then there is an argument to suggest they may avoid change, and persevere with existing ways of doing business to the detriment of their competitiveness.

This research has been particularly effective in highlighting the approach that some SMEs adopt in managing staff when moving forward with eBusiness change, and in providing a 'spotlight' on the issues that can arise. However, clearly there is much further work

required before definitive conclusions can be drawn. In particular, there is a need to explore more fully how variables such as size and age of SME, and the type of eBusiness change can influence some of the change management challenges these businesses may have to face.

There is of course also the issue of the payoff of adopting a change management approach to consider – in terms of reducing adoption and implementation time and cost, improving staff satisfaction, and ultimately customer satisfaction. Exploring more fully the eBusiness change management issues that arise between an SME and its customers, presents yet more interesting research possibilities. Perhaps what this work has in particular achieved is to set in motion this longer-term research path, and draw attention to the rich scope of opportunity for further more extensive research in this area.

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