



This paper appears in *Managing Modern Organizations Through Information Technology*, Proceedings of the 2005 Information Resources Management Association International Conference, edited by Mehdi Khosrow-Pour. Copyright 2005, Idea Group Inc.

# Virtual Communities for SMEs: Implementing a Regional Electronic Marketplace

Janice M. Burn, Denise E. Gengatharen and Craig Standing

School of MIS, Edith Cowan University, 100 Joondalup Dr., Joondalup Campus, Perth, WA, Australia, [j.burn@ecu.edu.au](mailto:j.burn@ecu.edu.au)

## ABSTRACT

This paper reviews the concepts of virtual communities and electronic marketplaces and, in particular, their relevance for SMEs. A specific example of a Regional Electronic Marketplace (REM) using a Community Portal model is examined within this context. The authors review the underlying philosophy for the project and the planning which preceded implementation. A review of the case highlights the problems which can occur and the issues which are critical for successful implementation of e-communities. Finally the authors propose a model for effective virtual community implementations.

*Note: A pseudonym has been used for the case study to preserve anonymity*

## INTRODUCTION

The Internet and e-commerce are viewed as a way for SMEs to compete with their larger counterparts in accessing global markets by overcoming distance and size. It is not surprising therefore that much research has gone into the uptake of Internet e-commerce by SMEs (Daniel, Wilson, & Myers, 2002; Bode & Burn, 2001; Walczuch et al, 2000). While these and other studies indicate growing levels of awareness and enthusiasm for e-commerce adoption by SMEs, there is little evidence to link this with real added value or increased levels of global business (Gengatharen & Standing, 2003; Levy & Powell, 2003; Tetteh & Burn, 2001).

Indeed, the ability to use IT in an effective manner is still of major concern to policymakers worldwide in respect to leveraging SMEs' productivity and global participation (Grewal et al, 2001; Fariselli et al, 1999). One of the solutions which is suggested for more effective IT penetration is the use of third party providers of IT services and the development of electronic markets specifically for SMEs (Kaplan & Sawhney, 2000). The emergence of electronic marketplaces creating trading hubs where suppliers are matched with buyers for equipment, products and services has the potential to play a major role in realising the potential of e-commerce for SMEs. Indeed, if SMEs are to remain competitive they need to adopt the changes that are occurring in the area of electronic commerce and virtual communities (Lee et al, 2003; Carver, 1999).

## E-MARKETPLACES

The term e-marketplace has been used interchangeably with e-market, e-hub, e-portal etc. Grieger (2003) reviews the literature on e-marketplaces and concludes that the unique feature of e-marketplaces is the bringing together of *multiple* buyers and sellers together in one central market space that facilitates the exchange of information, goods, services and payments. While the e-marketplace definition by Grieger and others like eMarket Services (July 2002) excludes single-buyer multiple-seller e-trading platforms. The profusion of these electronic marketplaces, the speed of transition to the electronic environment, the

variety of business models and the varying requirements of different industries and service sectors cloud an already confused marketplace picture (Grewal et al, 2001). Despite this, there is immense pressure on companies to move quickly to the electronic marketplace, often without a full understanding of what benefits they can accrue from participation and the issues that should be considered in the selection process (Banham, 2000). It is clear that this type of e-trading is threatening the more fixed forms of virtual supply chains where an organisation is integrated electronically with its suppliers down the supply chain (Clark & Lee, 1999).

Previous studies have identified the different levels of service that are offered by e-marketplaces, developing from trading hubs that support the identification of potential trading partners to more complex models offering selection and, increasingly, execution services (Choudhury et al, 1998).

The reported benefits to companies that are trading through e-marketplaces are compelling and suggest that cost savings being experienced by companies are considerable. Lucking-Reiley & Spulber (2000) estimate that online transactions could 'reduce costs by a factor of five or ten or more.' Typical cost saving efficiencies are lower procurement and search costs, reduced administration costs and development time, integrated global suppliers and a strengthening of relationships with commercial partners, cuts in inventory holdings and up-to-the-minute order tracking. Non-financial benefits include access to better quality goods and services, value adding information obtained from the e-marketplace, greater choice in the buying/selling process and greater convenience for participants. Many of the problems relating to the failure of SMEs to address the importance of electronic marketplaces lies in a lack of understanding of the advantages and how they can benefit from them (Korchak & Rodman, 2001; Said, 2000).

One such example of Government supported marketplace development can be found in the Twin-Cities.com\* regional electronic market developed for two regional councils in Western Australia. The Twin-Cities project offers SMEs an opportunity to select their preferred business model and to develop their strategy for online business in accordance with their preferred business philosophy. This unique concept combines both horizontal and vertical marketplaces and provides the underlying business infrastructure for SMEs to take advantage of electronic trading.

## PLANNING FOR THE REM

As early as 1999, a small group of interested parties came together to discuss whether the Internet could be used to facilitate a community portal for a regional community comprising two neighbouring regional councils in Australia. The regions were rapidly developing suburban 'new town' areas and the key players were the two local councils, the Business Enterprise Centre, the two local Business Associations and a local University. The stakeholders were approximately 220,000 residents, 7000 small businesses and two Tertiary Education Facilities. This group

together sought seed funding of \$20,000 from State Government and in 2000 developed a demonstration site to sell the concept.

After a preliminary survey the REM project was given the go-ahead by the consortium for the benefit of businesses in the region and to develop the region as an attractive location in which new business could develop and grow. The initiative intended to train businesses in the skills required to buy and sell on-line and also allow easy access to the products offered by these businesses to the major consumers in the region. Twin-Cities Association (TCA) with Board representation from the six key players – councils, University, Business Associations and Enterprise Centre would act as an independent body to manage finances and control the development of the REM.

Discussions by TCA’s Business Development Manager (PM-A) with a wide range of businesses indicated the clear expectation that the project would assist them to accelerate entry to the on-line market place, provide them with a wider market in the regional context and allow them to use these technologies to become globally competitive.

Other factors that the businesses would be looking for in the REM included:

- High profile.
- Secure business transactions.
- Information feedback on visits to the site.
- Support to allow them to effectively enhance web sites with reasonable cost effectiveness.
- An independent source of technical expertise and advice they could trust.

The Twin-Cities Gateway Project would provide, through a “Community Web” model, an official portal to be a single point of entry for individuals, communities, governments (Federal, State and Local), and business to access and interact within the two regions. The gateway would also provide the basis for regional online information exchange activities and encourage, support and develop awareness of the benefits and use of the Internet technology. Twin-Cities was about re-establishing a village community in a networked world:

**PROJECT DEVELOPMENT**

The explicit objective of the project was to develop an e-marketplace within the community (Figure 1). This would be known as the Regional Electronic Marketplace (REM).

The e-Marketplace was meant to permit regional businesses to sell, but theoretically anyone worldwide to buy through the e-Marketplace once registered. This policy was intended to give to business settled inside the region an infrastructure that could be a competitive advantage, and could also encourage relocation of business. In addition, Twin-Cities was meant to develop the social communities and to offer a marketing service for promoting the area, through directories like: environment, sport, tourism and education. Finally there was the plan to try to foster local job recruitment, as another way to improve the attractiveness of the region.

The Twin-Cities would support five different types of e-business relations:

- **Business to Government (B2G):** supporting all the procurement activities (tenders and normal purchases) of government structure (Administration, Education and Health) both inside and outside the region.
- **Government to Consumer (B2C):** letting people both inside and outside the region obtain information from the different government structures inside the region.
- **Business to Business (B2B):** letting business both inside and outside the region once registered to buy from registered businesses inside the region.
- **Business to Consumer (B2C):** allowing consumers both inside and outside the region basically to search for a business inside the region and support the full range of B2C eCommerce.
- **Consumer to Consumer (groups) (C2C):** developing an active online community for social groups and social services

Organisations seeking to purchase goods or services could use the model to send RFQs, lodge orders and segregate suppliers by locality. Sellers could be notified of RFQs by e-mail, fax or SMS and orders placed in a similar manner. In order to sustain the market large corporate buyers would have to commit to the market and support was agreed from the councils and the university. This would also supply buyers with easy access to a large range of suppliers and choice of goods, and increase their ability to obtain competitive pricing. In addition it was anticipated that suppliers operating within the marketplace would use the process to purchase their own requirements, and in so doing increase the level of trade within the region. Expansion of the system to allow the regions domestic consumers to purchase on-line had the potential to result in rapid growth in transaction levels. Once familiar with e-trading and having benefited from increased regional sales, business would be in a position to expand outside the region, to state, interstate and overseas markets.

**PROBLEMS IN THE DEVELOPMENT**

Table 1 shows the development timetable, some of the key players and the major milestones impacting on implementation of the portal. The problems can be summarised as follows:

- poor business plan
- low capitalisation
- project overrun
- poor project management – 3 separate project managers
- mis-timing of training requirements
- no marketing and training budgets
- ‘warring’ stakeholders
- limited understanding of stakeholder needs and motivation

The initial business plan was almost wholly dependent on grant income which did not materialise and with unrealistic costs for REM users (\$500 per annum as compared to a final fee of \$199). The founding members did not realise the extent to which additional funding would be required nor the full extent of technical expertise which would be required to implement the portal. Project managers came and went (three over one year) and a training manager was appointed over six months before the implementation of the portal and resigned prior to the test period. The Twin-Cities budget had no provision for marketing or training costs and while the revised business plan included provision for marketing there was a completely unrealistic target of 6 new users per day to be signed up by the marketing manager. Twin Cities declares bankruptcy in October 2004.

**ISSUES AND LESSONS FOR FUTURE**

Williams & Cothrel (2000) define an online community as groups of people engaging in many-to-many interactions where the motivation for the engagement is the shared interest in certain products. The idea behind such business-related communities is to adapt businesses to the culture of the internet by providing consumers with the ability to

Figure 1. Regional Electronic Marketplace

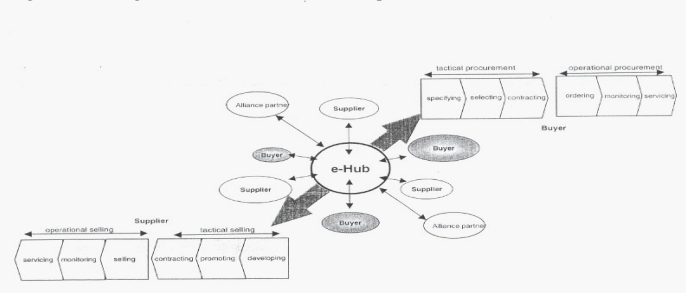


Table 1. Project Development Stages

Year	Stage	Project Manager	Situation	Income
1999	Region 1 Stakeholders Group	PM-A	Small group gathering	N/A
2000	Joint Regional Online Steering Committee	PM-A	Creating the basic group of stakeholders, the "demonstration site" is put online	• 20,000AS from the State Government
March 2001	TCA	PM-A	The TCA is created to be a separate financial and political body from stakeholders that can receive and manage funds	• 90,660AS from Federal Government (RAP) • 108,000AS from the 2 councils and University
Feb 2002	Portal Designer (PD) wins contract	PM-A becomes PT consultant	Development of Portal	• 70,000AS for contract
May 2002		PM-B	PM-A resigns PM-B appointed TM appointed	• 92,000AS SBDC grant for Training Manager (TM)
August 2002	Portal in test phase	PM-C	PM-B appointment withdrawn PM-C appointed TM resigns	
Dec 2002	Portal completed (6 months overdue) 60 users	PM-C	Soft launch of Twin-Cities.com	• A\$190 each for membership of REM
Feb 2003	Intended launch	PM-C	Delayed – new business plan developed	• \$50,000 additional revenue sought from 2 councils
June 2003	Crisis Meeting	PM-C	Threat of bankruptcy – stalemate between councils and Business associations - Revised business plan developed – PM-C retrenched	
October 2003	Marketing Manager appointed	MM	Network found to be unusable – PM take portal in-house	
December 2003	MM reports 3 new users	MM	Twin-Cities put into abeyance until February 2004	Realistic accounts show balance of \$1000
April 2004	MM resigns		Decision to cease trading	
October 2004			Wind-up meeting	

interact with each other in addition to the company (Armstrong & Hagel III, 1996). It is not required that members of such communities share beliefs or a feeling of belonging together, However Williams and Cothrel identify three activities which are central to the success of every online community: member development, asset management and community relations and these are examined in turn with respect to problems which have arisen within Twin-Cities.com.

### Member Development

Communities need critical mass to remain active. The Twin-Cities business model adopted is one which is totally dependent on a critical mass of large corporate buyers. The portal, however, does not necessarily offer any advantages to these groups since the sellers, typically SMEs, are unlikely to be able to offer discounted prices for large orders. Promotion is essential to build the community but, in fact, Twin-Cities.com has no marketing budget. One strategy which could have proved more successful was to offer free registration for the first year of operation to build the critical mass required to support online procurement.

### Asset Management

Assets in an online community range from content; to alliances with other groups; to the knowledge and experience of experts, to the community infrastructure. The community coordinator needs to capture the information members need but Twin-Cities has two customer communities as a focus, the REM community and the social community. These two groups have very different needs from an online community, require different support and need different training. Content generation is required for each of the five types of e-commerce supported in the portal, each involving very different players but all required to adopt some basic standards. An on-going Project Manager is essential but further there is a need for ongoing website administration and technical support.

### Community Relations

Interaction with other people is essential for successful creation of an active online community but requires online moderation and facilitation. The desired 'village community' of Twin-Cities.com will require constant moderation yet has to stimulate member generated content which will be seen to be of value to a very diverse community. There is

an additional political dimension here since the two communities are in fact, quite competitive and do not normally view themselves as a single group. Armstrong and Hagel III (1996) distinguish four types of community as communities of transaction, communities of interest, communities of fantasy and communities of relationship and argue that these are not mutually exclusive and further that communities would miss out on business opportunities if they do not cover all of them. However, managing the complexities of these relationships presents a real challenge to SMEs and the business groups associated with them and seems to be at the heart of the problems involved in Twin-Cities development. One solution may be to consider the community holistically as a virtual community.

### Virtual Communities

Lee et al (2003), propose five stages of growth for a virtual community as:

1. Fundamental understanding of concepts, principals, definitions and models
2. Technology development for sustained growth
3. Protocols for applications development, relationship building and knowledge sharing
4. Evaluation of implementation and outcome assessments
5. Institutionalisation and enlargement of benefits.

These stages may well be appropriate for an integrated and IT active community with high levels of motivation to interact (Grewal et al, 2001) but need to be preceded by additional steps when small businesses are involved and the 'village' concept embraced. These include:

1. Developing real understanding of benefits from e-communities
2. Stimulating and nurturing motivation to actively participate
3. Education and training on IT and e-business for all users
4. Gaining commitment from all stakeholders
5. Realistic budgeting and hands on project management

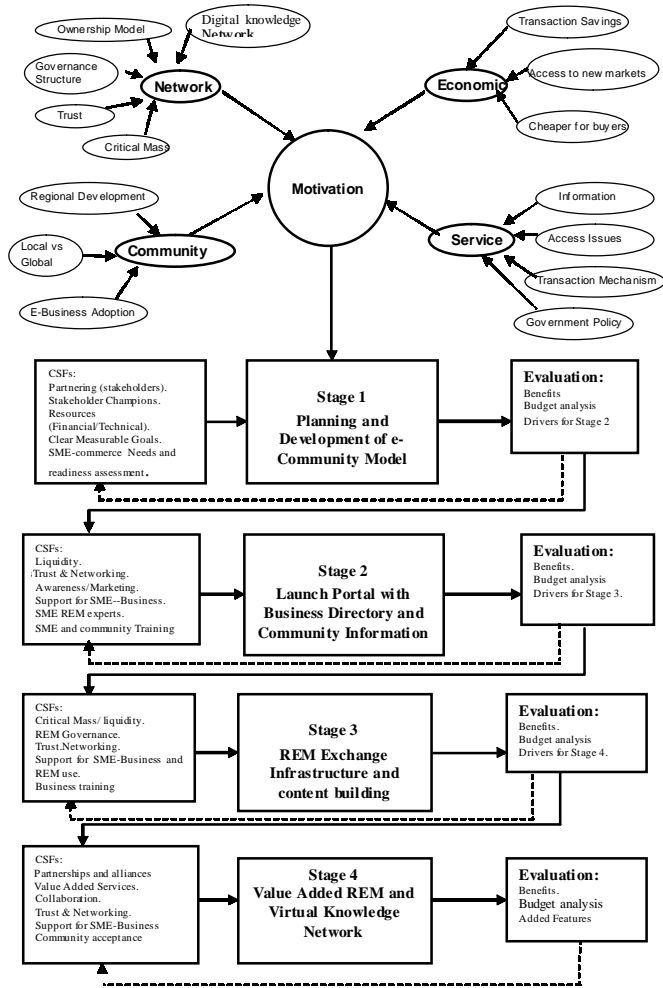
As with many such IT ventures it is not just securing the technology but also developing the social interfaces and commitment to participate which will lead to virtual community development. Figure 2 illustrates a proposed framework developed by the authors for virtual community development for an effective REM environment. The evaluation stage becomes an ongoing activity throughout the other four stages of implementation and feeds into the critical factors for success at each progressive level. It would be necessary for the management team to identify measures which can be realistically applied during the evaluation process (Mirani & Lederer, 1998).

A staged approach is used incorporating the principles of managing the development and implementation of large imprecise systems. Theory and best practice research on IS implementation, e-commerce, e-marketplaces and SME uptake of e-commerce are used at every stage of the framework to validate its constructs and test its reliability. The framework also allows for a structured approach to realistic goal setting and the development of evaluation frameworks to determine quantitative and qualitative benefits of REMs for all stakeholders.

### CONCLUSION

This paper describes an approach to developing an online regional marketplace associated with a community portal. While there is no dispute that real value can be obtained from online communities (Lueg, 2003) the factors which contribute to the success of such communities seem to be little understood by small players in the market. The case of Twin-Cities.com illustrates some of the problems and highlights the need for far more effective social management of all the implementation issues. The approach suggested here requires the adoption of a holistic virtual community model which can develop through a series of well defined and more importantly well managed stages.

Figure 2. Conceptual Framework for Staged Development of a Community-Portal Regional E-Marketplace



**REFERENCES**

Armstrong A. And Hagel III, J. (1996). The Real Value of On-Line Communities. *Harvard Business Review*, May-June, 134-141.

Banham, R. (2000). The B-to-B virtual bazaar. *Journal of Accountancy*, Vol 190(1), pp 26-30.

Bode, S. and Burn, J. M. (2001). Website Design Consultants, Australian SMEs and Electronic Commerce Success Factors. *International Journal of Business Studies*, Vol, 9, No 1, 73-85.

Carver, C. (1999). Building a Virtual Community for a Tele-Learning Environment. *IEEE Communications*. Vol. 37, 3, 114-118.

Choudhury, V., Hartzel, K. S. and Konsynski, B. R. (1998). Uses and Consequences of Electronic Markets: An Empirical Investigation in the Aircraft Parts Industry. *MIS Quarterly*, Vol. 22, 4, 471-507.

Clark, T.H. and Lee, H. G. (1999). Electronic Intermediaries: Trust Building and market Differentiation. *Proceedings of the Thirty-second Annual Conference on System Sciences*.

Daniel, E., Wilson, H. and Myers, A. (2002). Adoption of e-commerce by SME's in the UK: towards a stage model. *International Small Business Journal*, 20(3), 253-265.

eMarket Services, (2002): "Introduction to Emarkets & Why Export Companies Should Care About Them". Retrieved June 10, 2003 from [http://www.emarketsservices.com/reports\\_facts/pdf/eMarketServices\\_Introduction\\_to\\_eMarkets.pdf](http://www.emarketsservices.com/reports_facts/pdf/eMarketServices_Introduction_to_eMarkets.pdf)

Fariselli, P, Oughton, C., Picory, C. and Sugden, R. (1999). Electronic Commerce and the Future for SMEs in a global Market-Place: Networking and Public Policies. *Small Business Economics*, Vol. 12, 3, 261-176.

Gengatharen, D. E. and Standing, C., (2003): A Conceptual Framework to Support the Development of Government-Sponsored Community-Portal Regional Electronic Marketplaces for SMEs: A Stage Approach, 14th Australasian Conference on Information Systems (ACIS),26-28 November, 2003. Perth, Western Australia.

Grieger, M., (2003): Electronic marketplaces: A literature review and a call for supply chain management research. *European Journal of Operations Research*, Vol. 144, No. 2, pp. 280-294.

Grewal, R., Comer, J. M. and Mehta, R. (2001). An Investigation into the Antecedents of Organizational Participation in Business-to-Business Electronic Markets. *Journal of Marketing*, Vol. 65, 3, 17-34.

Kaplan, S. and Sawhney, M. (2000) E-Hubs: The New B2B Marketplace. *Harvard Business Review*, May/June, 97-103.

Korchak, R. and Rodman, R. (2001) eBusiness adoption among US small manufacturers and the role of manufacturing extension. *Economic Development Review*, Vol. 17, 3, 20-25.

Lee, F., Vogel, D. and Limayem, M. (2003). Virtual Community Informatics: A Review and Research Agenda. *JITTA: Journal of Information Theory and Application*, Vol. 5, 1, 47-63.

Lucking-Reiley, D. and Spulber, D. F. (2000). Business-to-Business electronic commerce. *Journal of Economic Perspectives*, Vol. 15, 1, 55-68.

Levy, M. and Powell, P. (2003). Exploring SME Internet Adoption: Towards a Contingent Model. *Electronic Markets*, Vol. 13,2, 173-181.

Lueg, C. (2003). Knowledge Sharing in Online Communities and its Relevance to Knowledge Management in the e-Business Era. *Int. J. Electronic Business*, Vol. 1, 2, 140-151.

Mirani, R. and Lederer, A. L. (1998). An instrument for assessing the organizational benefits of IS Projects. *Decision Sciences*, Vol. 29, 4, 803-838.

Said, A.J. (2000). Helping small firms trade effectively with the Internet. *International Trade Forum*, 2000. 3, 16-19.

Tetteh, E. and Burn, J. M. (2001). Global Strategies for SME-Business: applying the S-M-A-L-L framework. *Journal of Logistics and Information Management*, Vol 14, No 1 and 2, pp 171-180.

Walczuch, R., Van Braven, G. and Lundgren, H. (2000). Internet Adoption Barriers for Small Firms in The Netherlands. *European Management Journal*, 18(5), 561-572. Retrieved March 21, 2003 from Science Direct database.

Williams, R. L. and Cothrel, W. J. (2000). For-Smart Ways to Run Online Communities. *Sloan Management Review*, 41, 4, 81-91.

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/proceeding-paper/virtual-communities-smes/32688](http://www.igi-global.com/proceeding-paper/virtual-communities-smes/32688)

## Related Content

---

### A Study of Knowledge Discovery and Pattern Recognition Based on Large-Scale Sentiment Data in Online Education for College Students

Guoliang Li, Bing Wang and Maoyin You (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-13).

[www.irma-international.org/article/a-study-of-knowledge-discovery-and-pattern-recognition-based-on-large-scale-sentiment-data-in-online-education-for-college-students/323194](http://www.irma-international.org/article/a-study-of-knowledge-discovery-and-pattern-recognition-based-on-large-scale-sentiment-data-in-online-education-for-college-students/323194)

### Fuzzy Decoupling Energy Efficiency Optimization Algorithm in Cloud Computing Environment

Xiaohong Wang (2021). *International Journal of Information Technologies and Systems Approach* (pp. 52-69).

[www.irma-international.org/article/fuzzy-decoupling-energy-efficiency-optimization-algorithm-in-cloud-computing-environment/278710](http://www.irma-international.org/article/fuzzy-decoupling-energy-efficiency-optimization-algorithm-in-cloud-computing-environment/278710)

### Classification and Recommendation With Data Streams

Bruno Veloso, João Gama and Benedita Malheiro (2021). *Encyclopedia of Information Science and Technology, Fifth Edition* (pp. 675-684).

[www.irma-international.org/chapter/classification-and-recommendation-with-data-streams/260221](http://www.irma-international.org/chapter/classification-and-recommendation-with-data-streams/260221)

### Secure Mechanisms for Key Shares in Cloud Computing

Amar Buchade and Rajesh Ingle (2018). *International Journal of Rough Sets and Data Analysis* (pp. 21-41).

[www.irma-international.org/article/secure-mechanisms-for-key-shares-in-cloud-computing/206875](http://www.irma-international.org/article/secure-mechanisms-for-key-shares-in-cloud-computing/206875)

### Exploring the Integration of User-Generated Content in Media Organizations Through Participatory Journalism

Theodora A. Saridou and Andreas Veglis (2021). *Encyclopedia of Information Science and Technology, Fifth Edition* (pp. 1152-1163).

[www.irma-international.org/chapter/exploring-the-integration-of-user-generated-content-in-media-organizations-through-participatory-journalism/260257](http://www.irma-international.org/chapter/exploring-the-integration-of-user-generated-content-in-media-organizations-through-participatory-journalism/260257)