# Emerging Media: Prevalence and Impact in the Workplace

### Introduction

The competitiveness of U.S. firms is a direct result of the productivity of its workforce. It is well documented that manufacturing has been the main beneficiary of tremendous gains in productivity due to technology. It is less clear what impact the technology revolution has had on the productivity of nonmanufacturing workers (Charles, Guntupalli, & Hicks, 2008). Despite the lack of evidence on effectiveness, emerging media technology has become ubiquitous in most offices and institutions. As technological innovations emerge they are quickly introduced into the workplace with little examination of impact. Human resource management can assist organizations to adapt to the challenges of the technology era (Lengnick-Hall & Lengnick-Hall, 2006; Mamaghani, 2006) and in the process provide organizations with competitive advantage. Human resource management must first determine how emerging media technologies are integrated into the workplace, including general use, employee reactions, opportunities, challenges, management policies and practices related to emerging media use and the general effect of emerging media on human resource outcomes (e.g., stress levels, work/life balance, productivity, satisfaction).

### What is new media?

According to Gephart (2004) and Fulk and Descantis (1995), new or emerging media are technologies that mediate communication. Rice and Gattiker (2001) identify four components of a "new media": 1) Communication is structured by the technologies present; 2) Networks exist that connect individuals to other parties and information, 3) Information or communication resources exist and 4) Content is digitized. In early works on new or emerging media, electronic mail and video conferencing were considered new (Lea, O'Shea & Fung, 1995). Since these seminal papers, technology has advanced rapidly to include many more examples of emerging media. For example, Webopedia (2008) defines new media as computer-mediated communication technologies that include websites, streaming audio and video, online communities (including social networks), mobile computing, and virtual reality environments (e.g., Second Life).

While there is no generally agreed-upon exhaustive list of new or emerging media, this type of technology refers to digital methods of communicating (Flew, 2002). Extending this to the workplace, the term emerging media also refers to those applications, technologies, devices that support digital interactions

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with the organization, members of the organization, or customers. In this study, emerging media technologies were defined as: Email, mobile computing, podcasts, digital audio/media player, mobile communication device (e.g., BlackBerry), instant messaging, interactive web pages, and blogs.

# **Emerging Media and Management**

The emergent nature of media technologies limits the amount of empirical work to examine its use and impact on management functions. Some work has addressed individual technologies (e.g., blogs; Brody, 2005; instant messaging; Urbaczewski & Jessup, 2003), primarily with respect to the creation of policies and procedures to limit liability or control employee behavior. Research has generally been conducted by professional groups (e.g., ExecuNet) or research organizations (e.g., Gartner) and has not been reported in academic journals. This piecemeal approach to the study of emerging media and its effects leaves both academics and practitioners without guidance with respect to prevalence in the industry, support attached to the technologies, and its influence on important outcomes like cost, productivity, and satisfaction. Implementation of these various technologies has commonly been launched with the assumption that digital access to information and communication will enhance employees' productivity and work satisfaction. However, these questions have not been addressed in formal research. This study seeks to fill this gap in the literature by examining use, support, and impact of emerging media technologies in the workplace.

### Purpose of the Study

The intent of this descriptive study was to establish levels of activity and identify perceptions of emerging media's impact and cost in the workplace.

Therefore, the following questions guided the research efforts:

- What types of emerging media are being used in business?
- 2) How are emerging media influencing business transactions?
- 3) Is there a premium paid to those skilled in emerging media technologies?
- 4) What plans do organizations have to increase hardware, software and support for emerging media use in the workplace?
- 5) What management challenges are produced by these emerging media opportunities?

# Method

Survey Instrument

A survey instrument was used to assess the extent of emerging media usage and its intersection with human resource management in the workplace. This instrument was divided into six sections: 1) Types of emerging media and its use (e.g., blogs, podcasts; internal communication, marketing; 9 questions with 9 use options); 2) Extent of use in the workplace (2 items); 3) Value and support of emerging media skills (e.g., training, access to emerging media skills; 10 items); 4) Skills needed for emerging media usage (e.g., verbal communication; 11 items; 5) Financial information related to emerging media (e.g., percent of revenue associated with growth of emerging media; 3 items); and 6) Human resource outcomes of emerging media (e.g., productivity, turnover; 20 items). Average response time to complete the survey was 20 minutes. Prior to mass distribution, the survey was pilot tested with ten information technology and emerging media experts. Based on their feedback, two questions were clarified.

## Sample

The survey was administered electronically to two samples of human resource professionals. The first was a national sample of human resource managers/ directors identified through a national reference service. Following many of the recommendations of Dillman (2007), the survey was emailed to 10,001 addresses with a cover letter introducing the goals of the study and offering a small gift for completion of the survey (a \$5 coupon to a national bookseller). This sample yielded a very small response rate (< 1%), with 79 returning surveys. Based on the overall low response rate, we chose not to send a reminder email to this first sample.

The second sample of human resource professionals was provided by professional human resource organizations of a Midwestern state. The survey was emailed to 500 members of two urban chapters; providing a response rate of approximately 30%. As with the first sample, the email solicitation contained a cover letter explaining the study and promoting the gift with survey completion.

### Results

Prior to conducting specific analyses, frequencies and means of the two samples were computed. No significant differences emerged and the two samples were combined for all analyses. There was fairly even distribution across organizational size categories, with 43% of respondents representing employers with fewer than 100 employees,

39% representing employers with 101 – 499 employees, and 18% representing employers with 500 or more employees. A majority of firms surveyed had been in business for 20 years or more (68.6%). Respondents were most frequently human resource directors or vice presidents (37.7%), followed by HR managers (27.2%) and entry-level HR professionals (25.9%). Nine percent of the sample was categorized as other (e.g., controller, vice president of finance, operations manager). Of those who provided their organization's NAICS code or their primary area of business, the most frequent named industries were professional, scientific or technical services (12.5%), health care (7.9%) and manufacturing (7.5%).

The primary research questions were the extent to which emerging media technologies are used in organizations and what business purposes are served with this usage. Respondents could select up to all nine uses of the technology (Internal communication, external communication, marketing, purchasing, service delivery, sales, order tracking, inventory, and manufacturing). Table 1 presents the percentage of the sample that report using these technologies for the nine purposes identified. Not surprisingly, email was the most frequently used emerging media technology, with an average of 61.02% reporting that email was used across all aspects of the organization. Email was most often used for internal and external communication (98.3%), followed by marketing, purchasing and service delivery (each over 60%). Podcasts (10.88% and digital audio/media player (8.91%) were the technologies least adopted. Across categories of purpose of use, email had the most utility, followed by mobile devices (e.g., BlackBerry). Interactive web pages were used most frequently for external communication (67.2%), marketing (50.2%) and sales (37.3).

One interesting finding with usage and purpose was the growth of blogs for both internal (33.5) and external (31.0) communication. Blogs have been growing in the marketing area (Dwyer, 2007), but have not often been discussed as a means for disseminating information internally to the organization. Instant messaging was used primarily for internal communications, but was also employed for external communications by 28% of the sample.

In addition to overall use we were interested in the extent of emerging media use by individual employees. Eighty-one percent of respondents indicated that 81-100% employees use email in their work. Of those that use email, 35% use email between 81 and 100% of their workday (see Table 2). Employees also use interactive web pages and mobile communication devices frequently but with a wide distribution across both percent of employees who use and percent of the workday using that technology. Mobile computing, instant messaging, podcasts and blogs were less likely to be used by large groups of employees (e.g., 46% of the sample indicated between 1 - 20 % use of blogs, 49% indicated blogs were used between 1 - 20% of the workday). In all cases, emerging media is being used by some segment of the organizations in the sample at least some portion of the workday, indicating the pervasiveness of emerging media and its likely growth

Survey respondents were also queried about the importance of emerging media skills. A majority (67%) of the sample indicated that their organizations were willing to place a wage premium between 1 -4% of salary on emerging media skills, while an additional 23% believed that a premium of 5 – 8% percent was necessary. With respect to emerging media skills, 93% believed it was somewhat (56.2%) or very important

**TABLE 1: PURPOSES OF NEW MEDIA TECHNOLOGIES** 

	Internal Comm.	External Comm.	Marketing	Purchasing	Service Delivery	Sales	Order Tracking	Inventory	Manufacturing
Email	98.3	98.3	67.8	62.2	60.9	57.9	48.1	33.0	22.7
Mobile Communication Device	83.4	77.4	26.4	15.3	28.9	36.2	14.5	10.6	9.4
Interactive Web Pages	59.7	67.4	50.2	15.5	26.6	37.3	12.9	5.6	4.7
Mobile Computing	66.9	60.7	28.0	14.6	28.0	30.1	15.1	12.6	9.6
Instant Messaging	50.6	28.3	8.6	5.6	6.9	8.2	5.6	3.0	3.0
Blogs	33.5	31.0	27.6	9.2	7.5	15.5	5.4	5.4	2.5
Podcasts	25.5	29.7	16.7	1.7	7.9	12.6	1.7	1.3	0.8
Digital Audio/Media Player	23.4	20.0	16.2	1.7	6.0	11.1		0.9	0.9

Numbers are percentage of respondents. N = 233 - 239

(36.7%) for employees to have these skills at hire. This is consistent with the lack of training provided to employees on emerging media technologies, as 77% provide little or no training. This de-emphasis on training may reflect support staffing strategies with regard to emerging media, as most respondents indicated they had one to three internal, permanent support staff. Over half of the respondents had no external (outsourced) contract support staff and little to no growth in support staff was expected.

With respect to the third research question of investment in emerging media growth, measured as a percent of revenue, the expected result was to see a slow increase. Respondents most frequently expected in-house costs to increase 2 – 3%, while they expected outsourced costs to most likely increase by less than 1%, but with almost the same number expecting a 2 – 3% increase. Actual dollars associated with this increase were not calculated. as most respondents did not indicate the organization's revenue. Overall, these revenue and support staffing data indicate planning for a slight growth in emerging media investments over the next three years.

The final research question concerning the opportunities and challenges of emerging media was addressed by N = 219examining mean ratings of the negative/ positive impacts of emerging media on important organizational outcomes (e.g., turnover, satisfaction, employee stress, profits) as well as outcomes specifically related to emerging media technologies (e.g., control of organization message, control of employee behavior, connectivity to work). As can be seen in Table 4. all mean ratings for the various HR outcomes were above the neutral point (0=negative/5=positive). Competitiveness was seen as most positive (mean = 4.10, SD = .86), followed by branding (mean = 4.05, SD = .65) and control of organization message (mean = 3.79, SD = .76). At the low end of the scale, hiring (mean = 3.09, SD = .44), quality of work (mean =3.09, SD = .61), and connectivity to work (mean = 3.06, SD = .79) received lower rankings but were still positive. This more neutral stance on connectivity to work is at odds with previous survey results (ExecuNet, 2006) that reported the majority of executives surveyed (56%) believed being connected to work through mobile devices has improved their work/life balance.

TABLE 2: PERCENTAGE OF EMPLOYEES WHO USE NEW MEDIA IN THEIR WORK

	81-100%	61-80%	41-60%	21-40%	0-20%
Email	81	10	6	2	1
Interactive Web Pages	18	19	14	15	21
Mobile Communication Device	12	15	19	21	28
Instant Messaging	7	11	14	8	28
Mobile Computing	6	12	19	15	29
Digital Audio/Media Player	1	3	6	7	41
Podcasts	0	1	5	12	35
Blogs	0	0	3	4	46

N = 219

TABLE 3: PERCENTAGE OF WORKDAY EMPLOYEES USE NEW MEDIA

	81-100%	61-80%	41-60%	21-40%	0-20%
Email	35	21	22	16	5
Interactive Web Pages	12	9	16	23	35
Mobile Communication Device	11	17	12	24	27
Instant Messaging	5	8	8	21	36
Mobile Computing	5	6	10	7	41
Digital Audio/Media Player	0	1	1	7	41
Podcasts	0	3	3	9	45
Blogs	0	1	1	3	49

While there was little variation across the 20 outcomes or processes examined (e.g., all means above the neutral point), an investigation of the standard deviation for half of the items indicated the impact of emerging media was seen as negative by many respondents. For example, employee turnover had a mean of 3.59 with a standard deviation of .74, indicating the majority of responses fell between 2.85 (negative) to 4.33 (positive). This indicates a lack of consensus among respondents with respect to the impact of emerging media on this important HR metric. Similarly, the nature of the impact on hiring processes was also varied, with the majority of scores occurring between 2.65 and 3.54. This mitigates previous arguments regarding the positive potential of emerging media technologies, like blogs and podcasts (Tulgen, 2007). Understanding this disagreement regarding the positive and negative impact of emerging media is likely a complex task, with many potential moderators affecting the link between technology and HR outcomes. Future research could be aimed at modeling these relationships in order to

TABLE 4: IMPACT OF EMERGING MEDIA ON ORGANIZATIONAL BEHAVIOR

Variable	Mean	SD
Competitiveness	4.10	.86
Branding	4.05	.65
Control of Organization Message	3.79	.76
Worker Schedules	3.78	.62
Control of Employee Behavior	3.72	.68
Worker Satisfaction	3.71	.69
Control of Organizational Image	3.70	.67
Worker Stress	3.65	.66
Controlling Intellectual Property	3.62	.61
Employee Turnover	3.59	.74
Business Operations	3.54	.68
Profits	3.51	.62
Personnel Management	3.49	.70
Communication Efficiency	3.30	.66
Responsiveness to Market Demands	3.18	.66
Costs	3.13	.68
Hiring	3.09	.44
Quality of Work	3.09	.61
Connectivity to Work	3.06	.79

N = 175

give practitioners a realistic picture of the advantages and disadvantages of adopting emerging media technologies and integrating them into the workplace.

The last area examined in this descriptive study was the correspondence between emerging media technology adoption and the implementation of policy/ procedure to support these technologies (see Table 4). Email usage policies have been adopted by 88.6% of the sample, followed by internet surfing policies (78.9%), privacy issue (67.4%), and security concerns (60.6%). Less than a quarter of the sample had implemented a policy or procedure related to implied promises (17.1%) or employee blogs (14.9%). A surprising 6.9% of the sample had not created any policies or procedures to regulate their employees' interactions with emerging media technologies. These results indicate critical areas to address as more employees engage with emerging media technologies in the future.

### Discussion

As the results are considered, we emphasize that this study is a first attempt to document the use of emerging

TABLE 5: ANTICIPATED GROWTH IN NEW MEDIA COSTS (PERCENT OF REVENUE)

Expected Cost	10% or More	7-9%	4-6%	2-3%	1% or Less
In-House	5	11	25	41	18
Outsourced	4	8	16	36	37

N = 167-170

# TABLE 6: POLICY IMPLEMENTATION TO MANAGE EMPLOYEE BEHAVIORS

Policy Name	Percentage
Email Use	88.6
Web Surfing	78.9
Privacy	67.4
Security	60.6
Message Content	60.0
Phone Use	55.4
Remote Working	40.0
Intellectual Property	39.4
Non-Compete Agreements	30.9
Copyright Issues	28.6
Instant Messaging	25.7
Implied Promises	17.1
Employee Blogs	14.9
None	6.9
Other	2.9

N = 175

media in a large sample of organizations. As might be expected, use of these technologies varies widely between organizations. Email is ubiquitous, while blogging is relatively specialized and limited to select employees. It is interesting to learn the purposes for which employees are using these technologies. While generally referred to as communication technologies, there are numerous targets of these communications. In fact, the uses extend beyond interpersonal interactions to activities such as marketing, purchasing, and service delivery.

Another way to measure the importance of emerging media is to look at the value placed on the skills required to operate in the emerging media workplace. Respondents indicate willingness to pay wage premiums to acquire and keep workers who have these skills. While companies were willing to pay a premium for skills they do little to train workers already in their organizations. This probably reflects the "newness" factor. Training is seen as a long-

term commitment. However, these technologies may be seen as quickly coming and going, thus making it difficult to have time to develop programs for effective and thorough training.

One of the initial questions for this research was whether emerging media technologies have a positive impact on the productivity of workers in organizations. The data indicate that the respondents have a generally positive view of the impact of these technologies on their respective organizations. Competiveness was regarded as most positively affected. The overall finding that the impact is positive may reflect a general belief that technological change is inevitable and positive and has led to increased organizational productivity (Pacey, 1983). While respondents report positive impacts of emerging media, sixty percent of them anticipate only moderate growth of emerging media as indicated by their estimate of less than 3% per year growth for both internal and external costs of new media.

Given the level of use of emerging media it would be expected that organizations need policies and procedures to manage employee behavior relative to these technologies. While a number of policies are reported, it is surprising that the percent of firms with policies is not higher. For example, while 98% of firms report the use of email only 88% reports having an email policy. In light of the many anecdotes of email abuse, further analysis is necessary to

determine why policies are not more widespread.

While the results of this study are interesting and informative, some caveats which must be stated. The response rate from our first email mailing was quite small. Thus, we cannot know if there was a systematic bias in the respondents. Additionally, we have no baseline data to which to compare the results. While we know that some of these technologies are relatively new, it is not possible to know whether their use is growing, declining or is remaining stable. Finally, there are no objective performance data to which we can relate the use of emerging media. The outcome data presented are self reported. It is not possible to determine if emerging media are having the generally positive results reported. These limitations should be addressed in future research.

There are additional questions raised by this study. The first concerns emerging media adoption strategies. Organizations can choose a passive or active adoption strategy. An active strategy might be associated with higher budgets for training and support. Another question might be whether these technologies are viewed as stand alone or are they adopted in bundles. That is, are some viewed as complementary and adopted together. Some measure of firm level emerging media intensity may add insight to other behaviors and attitudes toward technology adoption.

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