Using Real Options Theory to Evaluate Strategic Investment Options for Mobile Content Delivery: A Case Study

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ABSTRACT

With a rich fare of localized content, but limited regional media outlet channels, mobile content generates new business opportunities for Media News, a small media company with considerable growth potential. Two business models are considered: partnering with wireless service providers and strategic alliances with mobile content syndicators. First, the models are evaluated based on their resource requirements, market share acquisition, revenue generation, and nature, scope and control of content and bandwidth. Then, real options analysis is used to value Media News’ managerial flexibility in responding to uncertainty in investment choices specific to the media industry. The modeling approach, analytical methods, and decision support tools employed in this paper serve as exemplar for engineering managers involved in strategic investment decisions, especially in emerging areas such as mobile commerce.

Keywords: Decision-Making, Mobile Content Services, News Media, Real Options, Valuation

INTRODUCTION

The growth of the mobile content market has been fueled by factors such as increasing subscriber growth, maturing network technologies, and mushrooming content types. Market research leader, Juniper Research, predicts that the mobile content market will reach $17.5 Billion in 2012 worldwide from $9 billion in 2007 (http://juniperresearch.com/). Media companies worldwide are capitalizing on this market growth by investing in mobile content services. In this article, we present systematic methods to value investments in the media industry through a real-life example of Media News, a growing media company.
established an image of a lifestyle, business, and sports magazine. It covers multifarious topics, including home and garden, food and dining, arts, and special surveys, such as an annual feature about the best doctors in town. *Media News*’ monthly circulation is about 20,000 and its readership is estimated at about 69,700, primarily drawn from the upper-middle class. About 85 percent of its income is from advertising while the remainder is derived from subscription and newsstand sales. *Media News* has approximately a 10 percent share of the local market as of late 2008, which is estimated to be about 15 percent of households. At the time of this study, the magazine’s 17 employees included two editors, and administrative and advertising support personnel. Freelancers hired on contract produced most of the articles and pictures. *Media News* is an emerging company with substantial growth prospects. To enhance its market base and provide more real-time content, *Media News* entered into an alliance with two TV channels, MidWest-TV and BPN 14, and a web service provider, Channel 4000. *Media News*’ web site has its own customized search engine and presents a variety of timely news from business to college sports. *Media News* also broadcasts its content on its TV partners’ web sites, in addition to exhibiting links to its partners’ real-time headlines on its own web site. *Media News*’ goals behind these partnerships are to disseminate its content via multiple channels and increase circulation, thus guaranteeing a continuous source of revenues.

The traditional net present value (NPV) approach to valuing investments consists of selecting projects that yield expected returns in excess of the return required in financial markets from assets of comparable risk. The NPV approach implicitly assumes pre-commitment to future plans and considers investment decisions as “now or never” propositions. Further, van Putten and Macmillan (2004) argued that employing traditional DCF analysis to value investment decisions of growing companies produces inaccurate results, especially when the DCF value of the project is barely positive or slightly negative. Investment decisions should therefore be based on an expanded NPV criterion, which incorporates the flexibility value along with the direct NPV of expected cash flows from an immediate investment. Real options analysis (ROA) has been particularly used to value investments of media firms who are increasingly facing pressure to adapt quickly to the dynamics of the industry. Dimpfel et al. (2002) argued that ROA is particularly successful in emphasizing the high degrees of uncertainty and irreversibility peculiar to the media industry and, if used correctly, can contribute to the reactive and proactive management of flexibility in media companies. The authors argued that media companies exhibit a high degree of irreversibility due to their firm-specific, low reselling value and high operating expenses attached to the costs of infrastructure and marketing. *Media News*, being a small media company with considerable growth potential amid uncertainty, is clearly a good candidate for applying real options theory. The analytical methods employed in this paper provide useful insights to engineering managers who are constantly faced with the dilemma of which projects to invest in and which ones to abandon. The illustrations developed demonstrate how managerial decisions may be facilitated with the aid of low cost real options tools.

The remainder of this paper is organized as follows. In the next section, we evaluate two strategic models for *Media News* based on a qualitative cost-benefit analysis. We then undergo a quantitative analysis based on ROA. Using sensitivity analyses, we show that ignoring the valuation of these options can lead to the wrong decision. Finally, we provide a foundation to generalize the results of investment in the technology sector, specifically in the areas of mobile gaming and commerce.

**MOBILE BUSINESS MODELS FOR MEDIA NEWS**

Growing firms’ alliances are most valuable when built with large firms that possess leading-edge technological resources. *Media News,
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