ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/257609957

A PORTFOLIO APPROACH TO CLOUD COMPUTING – A RESEARCH IN PROGRESS PAPER

Conference Paper · September 2013

CITATIONS
0

READS
127

1 author:

Roger Sweetman
National University of Ireland, Maynooth
10 PUBLICATIONS **77** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Agile and Lean Project Management View project

All content following this page was uploaded by Roger Sweetman on 31 May 2014.

The user has requested enhancement of the downloaded file.

A PORTFOLIO APPROACH TO CLOUD COMPUTING – A RESEARCH IN PROGRESS PAPER

Roger Sweetman

Discipline of Business Information Systems, NUI Galway, Ireland

r.sweetman1@nuigalway.ie

Research Motivation

Cloud Computing can make software as a service more attractive and shape the way IT hardware is designed and purchased (Armbrust et al. 2010). It is seen as a panacea by many organisations. These organisations are under massive pressure to maintain profits and deliver operational excellence. However as Michael Porter (1996) wrote, “operational excellence is not strategy”. Strategy is the basis on which organisations battle to maintain competitive advantage. Strategic goals are realised by aligning IT projects with business goals and grouping them into portfolios (De Reyck 2005). IT project portfolios are the subject of a growing body of literature, however there has been no focus on the specific challenges of cloud computing.

Literature Review

Existing project selection criteria often focuses on return on investment and discounted cash flows. These criteria ignore the flexibility inherent in complex dynamic systems and systematically undervalue them (Benaroch and Kauffman 1999). They also fail to measure the alignment between projects and business strategy. Proper alignment requires companies to take a portfolio approach to its adoption of Cloud Computing.

Practitioners will seek to avoid some of the previous mistakes that have haunted IT. Software development suffered from a crisis of budget overruns, late delivery and issues with functionality (Naur and Randell 1969). McFarlan (1981) introduced IT project portfolio management (PPM) as a response to the software crisis. He grouped projects into portfolios in order to minimise project risk. Market risk can be transferred to vendors through cloud technologies (Armbrust et al. 2010). Market risk has become a big problem for IT organisations. They exist in a dynamic environment with rapid change. This can result in “big bang disruption” where markets are wiped

out overnight. (Downes and Nunes 2013). The threat of big bang disruption forces organisations to embrace business agility. Agile organisations have to be prepared to enter and exit markets quickly. This can result in them losing alignment with their intended strategy. Minzberg's use of the term "strategy formation in an adhocracy" (1985) is applicable to IT in complex environments (Harris et al. 2009). A change in strategy requires a review of the alignment of business goals with operational projects (PMI 2009). Conversely, the adoption of emergent technologies should trigger a review of strategy at the portfolio level. Ensuring strategic alignment is a key output of PPM (PMI 2009). But PPM does not have the appropriate tools for this (Jeffery and Leliveld 2004). There are no accepted metrics to measure the alignment of Cloud Computing projects to overall strategy.

PPM has focussed almost exclusively on portfolio selection (Frey et al. 2013). However there is a significant body of research in financial portfolio literature that looks at performance measurement, style (e.g. Sharpe 1992) and drift (e.g.Idzorek and Bertsch 2004). The trans-disciplinary nature of business research has gained considerable support (Saunders et al. 2012)

Methodology

How can we measure strategic alignment in a portfolio of cloud based projects? This requires us to: Identify the appropriate data available to measure strategic alignment in project portfolios (RQ1). Identify and adapt an appropriate financial portfolio framework to measure project portfolio alignment (RQ2). Validate the framework for cloud portfolios (RQ3). The study will be informed by explorative case studies. Interviews and archival research will compare the metrics required by portfolio managers with those available. A Survey will generate insight into the flow of information both between teams and portfolio managers. Case studies will be used to validate the framework to measure alignment in project portfolios.

Contribution

Emerging IT trends are often practitioner led. Cloud Computing is no different. This research will make a contribution by providing a rigorous framework to measure strategic alignment in Cloud Computing portfolios. It will also help formalise some of the best practices already in use by practitioners.

This work was supported, in part, by Science Foundation Ireland grant 10/CE/I1855 to Lero - the Irish Software Engineering Research Centre (www.lero.ie). I would like to thank Kieran Conboy and others in the BIS group in NUI Galway for their help.

References

Armbrust, M., Fox, A., Griffith, R., Joseph, A. D., Katz, R., Konwinski, A., Lee, G., Patterson, D., Rabkin, A. & Stoica, I. (2010). A view of cloud computing. *Communications of the ACM,* 53**,** 50-58.

Benaroch, M. & Kauffman, R. J. (1999). A case for using real options pricing analysis to evaluate information technology project investments. *Information Systems Research,* 10**,** 70-86.

De Reyck, B. (2005). On "investment decisions in the theory of finance: Some antinomies and inconsistencies". *European Journal of Operational Research,* 161**,** 499-504.

Downes, L. & Nunes, P. F. (2013). Big-Bang Disruption. *Harvard Business Review,* 91**,** 44-56.

Frey, G. E., Mercer, D. E., Cubbage, F. W. & Abt, R. C. (2013). A real options model to assess the role of flexibility in forestry and agroforestry adoption and disadoption in the Lower Mississippi Alluvial Valley. *Agricultural Economics,* 44**,** 73-91.

Harris, M. L., Collins, R. W. & Hevner, A. R. (2009). Control of Flexible Software Development Under Uncertainty. *Information Systems Research,* 20**,** 400-419.

Idzorek, T. M. & Bertsch, F. (2004). The Style Drift Score. *Journal of Portfolio Management,* 31**,** 76-83.

Jeffery, M. & Leliveld, I. (2004). Best practices in IT portfolio management. *Mit Sloan Management Review,* 45**,** 41-49.

Mcfarlan, F. W. (1981). Portfolio approach to information systems. *Harvard Business Review,* 59**,** 142-150.

Mintzberg, H. & Mchugh, A. (1985). Strategy Formation in an Adhocracy. *Administrative Science Quarterly,* 30**,** 160-197.

Naur, P. & Randell, B. (1969). Software Engineering: Report of a conference sponsored by the NATO Science Committee, Garmisch, Germany, 7-11 Oct. 1968, Brussels, Scientific Affairs Division, NATO.

Pmi 2009. *The Standard for Portfolio Management, 2nd ed.,* Newtown Square, Pennsylvania, USA, The Project Management Institute.

Porter, M. E. (1996). What Is Strategy? *Harvard Business Review,* 74**,** 61-78.

Saunders, M., Lewis, P. & Thornhill, A. 2012. *Research methods for business students,* Harlow, Pearson.

Sharpe, W. F. (1992). Asset allocation: Management style and performance measurement. *Journal of Portfolio Management,* 18**,** 7-19.

View publication stats