Rowan Revisited: a review of the management of computers from the 1960s until today.

James B Johnston (1) and Dr Alan Tait
Organisation(s): 1 University of the West of Scotland: 2 University of Portsmouth

Email: jamesb.johnston@uws.ac.uk

School of Business and Enterprise

University of the West of Scotland

High Street

Paisley

PA12BE

Management History Track

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Summary

This paper seeks to examine organisations historical experiences of computers in order to consider their on-going relevance for modern organisations and their frequently disappointing results from investments in information technology. It will therefore analyse some of the findings of Rowan (1984) on how managers have coped with the introduction of computers since the 1960s. It will conclude by arguing for continuing relevance of Rowan's broad analysis although these lessons require some modification in light of more recent experiences of computers since 1984.

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Introduction

The origins of this paper come from a variety of sources. It partly lies in the current profile within the media, management and wider communities with the opportunities and dangers offered by such terms as cloud based computing; software as a service; platform as a service; web 2.0 and most recently the internet of things. It also stems from related recent work by the author with the Association of Image and Information Management (AIIM) on the current managerial, organisational and legal implications of these largely cloud based technologies. AIIM are a global, not for profit membership based organisation that acts as an intermediary between customers and suppliers of information management products and services, established in 1943 and originally called the National Microfilm Association.

Another influence was an article in Computer Weekly (2014) about a book published by Catt (1974. Cited by Saran, 2014) who wrote:

> "I look in the computer industry I find decadence, financial disaster and confusion."
>
> "In the book he claims that at least 50% of companies are unhappy with their computer installations, and 20% of such installations are disasters, sometimes bankrupting the companies which bought them." Saran (2014)

Finally the recent debate between Cooper (2012) and Brynjolfsson and McAfee (2013) that Krugman (2013) described as focused on what the future may hold in terms of 'techno-optimism' and 'secular stagnation' did not fully focus on the implications of managerial activities, attitudes and knowledge for future productivity and growth.

Rowan (1984) book called 'Managing with Computers' focused his experiences with a variety of organisations on how to manage with computers since starting to work with computers in the 1960s with who became known as Price Waterhouse in 18 countries. A central justification for the creation of the book was that managers commonly made four mistakes with regard to the computers within organisations whilst possibly being involved in the 'prevailing technological hysteria'. In summary, these were

1. **Computers are Different**
   A misconception that computers were perceived by management as being different from other items of capital investments and therefore uniquely not subject to the normal management and financial controls of all other investments.
2. **Abdication by Top Management**
   Senior management abdicated any responsibility for all aspects the computer systems within their own organisations to their computing staff once the investments had been signed off.

3. **Underestimation of Amount of Work Involved with Computers**

   Managers seriously underestimated the reality of the amount of work involved with implementing and running.

4. **Lack of User Participation**

   Senior Management allow for a lack of involvement by the proposed and actual users of computers in any aspects of the design and implementation of their computer systems. One consequence of this was the growing disillusionment of users had fostered 'user independence'.

As Rowan concludes for each of these managerial mistakes

> '… the consistent element in these common errors is the failure of management to recognise, accept or exercise the responsibilities that would normally be expected of them…'

His detailed analysis of why these mistakes and an analysis of the current relevance his analysis will be examined in a separate paper.

Current Experiences of IT within organisations

One particularly salient recent comment is from Redman and Sweeney (2013) who noted in line with many others including Grindley (1995) that serious issues exist. The tensions between IT departments and the wider organisation are well expressed here.

> "For the past several years we have watched with increasing dismay at the increasing chasm between information technology (IT) groups and their business counterparts. From where we sit, both sides have legitimate beefs: IT complains that, despite the increasing penetration of technology into every nook and cranny of the business, it doesn't have a seat at the table and no one understands how difficult their jobs are given the constraints under which they operate. The business complains that IT doesn't understand the business, consistently overpromises and under-delivers, and slows innovation."

This is summarised by Grindley (1995) as the culture gap that exists in most organisation. Further evidence from a recent survey by AIIM (2013) on Information Governance found that respondents in different countries reported amongst other issues that

1. Progress towards the paperless office work is slow.
2. Effective information governance is crippled by poor training
3. Senior management is ignoring risks associated with IT
4. IT is losing ability to transform business
5. Filing systems are chaotic
6. Social content management is rarely being undertaken
7. Cloud based activities are in everyone's future
8. Manual processing of record management and recovery is still commonplace.

(548 cases)

At a more general project level, these findings are broadly supported in a recent book by Lloyd (2013) who found from a literature review that

> "IT projects are usually expensive and slow to deliver relative to other business changes and operational costs (see below). More often than not, they fail to deliver their expected value at close to anything like the estimated budget and schedule."

Since such findings are supported by the Standish Group (2010) and cited by Lloyd, 2012), as a result of the record of IT projects being so patchy Lloyd (2013) argued that you should seriously consider these questions before deciding to embark on a significant IT project.

- Can you change the business process in some way without the change involving IT?
- Can you employ agency staff that will cost less than an IT project?
- Is there a supplier who will provide a turnkey service at a predictable cost?
- Can you combine small IT changes with one or more of the above?

Other relatively recent developments that have increased prominence due to their rapidly increasing use of what has become know as the 'bring your own device' or consumerisation of IT concept with associated use of cloud based technologies and so called 'apps.' The result of these changes has been in many cases the almost spontaneous, informal and often unmanaged growth of the use of IT in an organisational context has led to the greater involvement of staff with IT that was traditionally the case.

As Moore (2010, cited by Mancini: 2012) said during a meeting with the CEO of AIIM John Mancini 'Why is it that in terms of technology I feel so powerful as a consumer and so lame as an employee?' Furthermore as Mancini (2012) said

> 'as the CEO of a small business of 45 employees with enormous member expectations about our own use of technology, [Moore's question] quickly morphed into Why ... have I have been spending so much on technology and yet have so much frustration to show for it?''

The salience of this quote is particularly acute given that AIIM's membership consists of many of the largest information technology vendors and customers in the world and has approximately 75000 members across the world.

Restatement of Rowan's Common Mistakes of Management

1. Computers are still treated differently.
Given the recent very high levels of investments in information and communication technologies and the above outline evidence it hints at the possibility that management still perceives information and communication technologies as somehow unique.

2. On-going abdication by Top Management.

There is evidence from the survey conducted by AIIM that senior managers accept chaotic filing of routine information and they are ignoring legislative and compliance risks associated with their information governance.

3. Underestimation of Amount of Work Involved with Computers.

Whilst the findings of Lloyd and others supports the view that unrealistically short deadlines are often based on this continued underestimation of the work involved, the advice from such organisations as the British Computer Society and the Royal Society of Engineering to use pre-existing application software and avoid bespoke development if at all possible (RAE and BCS, 2004).

4. Overestimation of Amount of Work Involved with Computers.

The adoption of software off the shelf software and their frequent, inherent sophistication as a result of large investments means that management frequently overestimate the development effort involved with this type of work, Tate (2015).

5.Lack of User Participation in Formal IT projects whilst users drive Bring Your Own Device (BYOD) initiatives.

As Redman and Sweeney noted above there is still a lack of constructive participation of users whilst as Rowan predicted there has been increasing user independence from centralised IT projects to the increasing unplanned, organic, in some cases chaotic and anarchic use of 'unofficial' devices.

Conclusion

Whilst there have been substantial changes in the technical capabilities and levels of information technology adoption since 1984, the evidence briefly reviewed here would point to the need for further exploration of how senior management should participate in both the financial and organisational management of new technology investments if the on-going frustrations and disappointments of many organisations are to be finally overcome. This is especially urgent given the latest trend towards focusing on the proposed increased investments in the internet of things that commentators are now discussing in similar ways to those that Marchand and Davenport (2000) cautioned against as 'technological utopianism'.

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