IT FAILURE AND THE COLLAPSE OF ONE.TEL

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Abstract: There are a number of cases about IS failure. However, few suggest that the IS failure led to the downfall of the business. This paper examines the information technology strategies employed by the high-profile Australian telecommunications company One.Tel Limited and assesses the extent to which a failure of those strategies may have contributed to, or precipitated, One.Tel's downfall. With increased reliance on technology in business and its sophistication, potentially catastrophic failures may be more common in the future

One.Tel was founded in 1995 as an Australian telecommunication company and ceased trading in 2001. In the middle of 1999, the focus of the company changed towards the building of a global business, geared to the delivery of media content. We argue that the IT strategies operating within One.Tel were not adapted to meet the rapid growth that ensued. Further, we suggest that the information technology approaches that had served adequately in the early years were not appropriate for its later ambitions. Most importantly, we discuss the failure of its billing system in relation to published frameworks of IT failure as well as the importance of getting such basic systems right. We argue that these frameworks do not cover well the One.Tel case and we put forward a new category of IT failure, that of 'business ethos'

Key words: IS failure, One.Tel, IS strategy, Business ethos, Case study

1. INTRODUCTION

This paper is a discussion of the business model of the Australian telecommunications company One.Tel Limited. The paper examines the information technology strategies employed by the company and assesses

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the extent to which a failure of those strategies may have contributed to, or precipitated, the downfall of the business. The paper represents our interpretation of documentation in the public domain about the collapse, much of this being from published reports, web sites and newspaper cuttings.

The One.Tel company was founded in 1995, and ceased trading in 2001. During its relatively brief existence One.Tel occupied a position in the second rank of Australian telecommunication companies. The notoriety that it gained probably exceeded its position in the market place. The company had a number of high profile directors, and was always known for promoting itself very effectively. One.Tel was declared insolvent in June 2001 and is in process of being liquidated. Much has been written in the press about the reasons for One.Tel's rapid descent into insolvency. Most of the material has focused upon the apparent failings of the company's high profile joint managing directors, Jodee Rich and Bradley Keeling. The focus on these leading players, and Lachlan Murdoch representing News Corporation and James Packer representing PBL (two major Australian media companies that took up nearly 50% of the ownership of One.Tel), though understandable from a journalistic viewpoint, has underplayed the impact of IT failure.

This paper examines the overall strategies of the company. In the middle of 1999 the business made a change of direction. At that time the two Australian media companies invested heavily in One.Tel. Thereafter the focus of the company changed towards the building of a global business, geared to the delivery of media content. This change of direction was accompanied by a major injection of funding from its new shareholders.

In this paper we argue that the IT strategies operating within One.Tel were not adapted to meet the rapid growth that ensued. It suggests that the methods that had served adequately in the early years, were not appropriate for this change. The delivery of IT systems for a full-service large-scale telecommunications company requires a high degree of professionalism and long term planning.

IT failure has been a common topic in the literature over the last 25 or more years with the annual CHAOS Report (Standish Group, 2001) perhaps being the most celebrated regular report. Andrew Taylor (2000) reported that only 12.7% of IT projects were successful (130 of 1027 surveyed); worse, the success rate for development projects, which comprised 50% of the sample, was 2.3%. Although Beynon-Davies (1995) and Peter Neumann (1995) cited cases of loss of life due to computer failure (the London Ambulance and Therac-25 cases), Fitzgerald (2000) argues that this was very unlikely. Also, while there are examples of IT failure causing the demise of organisations (Greyhound's TRIPS System (Tomsho, 1994), FoxMeyer's ERP project (Scott, 1999), and Oxford Health's 'computer glitch' (Khasru, 2001)), in truth, research into failure would suggest that very few

IT projects, although often drastically late, over-spent or not meeting requirements, appear to have more than a fleeting impact on the bottom line of companies. Even large-scale failures such as that of Westpac CS90 did not result in the demise of the company. We argue that One.Tel provides one of a small number of examples of a catastrophic impact from IT failure and we review it in the light of IT failure frameworks (Lyytinen & Hirschheim, 1987; Kiel, 1995; Poulymenakou & Holmes, 1996), in particular, the well-referenced paper of Lyytinen and Hirschheim. In so doing, we argue that the failure does not fall into one of Lyytinen and Hirschheim's four categories, and we therefore suggest a fifth failure category, that of 'business ethos'.

2. THE ONE.TEL CASE

2.1 A brief history of One.Tel Limited

One.Tel Limited was founded in 1995 in Sydney by two well-known entrepreneurs, Jodee Rich and Bradley Keeling. These two businessmen had previously established and built a major Australian software reseller, Imagineering Limited. This earlier venture had grown rapidly and prospered in the 1980s. Five years later the company failed under a mountain of debt and unsold inventory. According to Cadzow (2001), Rich and Keeling had invested massively in obsolete and unsaleable software. By the mid-1990s the investment community was prepared to allow Rich and Keeling to try again. They were accustomed to working in fast-growing technology-based industries. They were also well connected in terms of access to financiers, investors, and talented people who could help their company develop.

The company grew at a very substantial rate, and accomplished a great deal in a short time. Table 1 provides an indication of the rate of worldwide growth that was achieved. However, this remarkable growth was taking place without regard to profitability or returns to shareholders, as Table 2 demonstrates.

Based on the published figures, the dramatic growth in One.Tel's subscriber base in its final 18 months of trading was achieved only by incurring losses on a grand scale. However, Keeling insisted that the business plan was on track when delivering a very confident interview to the London press in December 2000 (Biddlecombe, 2000). As late as 5th April 2001, Rich declared "One.Tel is on track to a positive cash position of $75 million by 30th June 2001, as forecast" (newsandviews13765, 2001).

Table 1: Growth of One.Tel Limited

Year Ended	Sales Revenue $AU	Subscribers
1996	65.0m	80,000
1997	148.0m	160,000
1998	207.0m	290,000
1999	326.0m	642,000
2000	653.0m	1,840,000

Source: One.Tel Annual Report (2000)

Table 2: Profitability of One.Tel Limited

Period	Profit / Loss $AU
Year to Jun 1999	9.9m profit *
Year to Jun 2000	295.9m loss *
Half-year to Dec 2000	132.0m loss **

Sources: * One.Tel Annual Report (2000) ** newsandviews14780 (2001)

On 17th May 2001 a crisis board meeting was held, when the company had effectively run out of funds. Jodee Rich departed the board that same day, and the major shareholders, News Corporation and PBL, announced a $132 million rescue plan. However on 30th May the rescue plan was abandoned, and the administrators were called in. By 6th June it was announced that One.Tel would be closing down (Trute, 2001). From this brief history, three conclusions can be drawn. Firstly, that One.Tel was growing at an extremely fast pace; secondly, that the cost of that growth appeared to be substantially exceeding the incoming revenue; and thirdly, that the chief executives did not appear to have a clear picture of the true financial state of the company.

2.2 Business strategies - the early years 1995 - 1998

The strategies that One.Tel followed for the first four years of its existence were well chosen and were undeniably rewarding. The rapid growth in the customer base and revenues are indicative of this success. Three main lines of business were pursued. These were:

- Fixed wire services;
- Mobile reselling;

- Internet service provider (ISP).

The strategy in these early years was "customers not cables" (One.Tel Annual Report, 1999). In other words, One.Tel positioned itself as a marketer and reseller of services, and not as a provider of hardware infrastructure. The company perceived a market opportunity presented by the deregulation of the telecommunications industry within Australia, which took place in the early 1990's. The hardware infrastructure of exchanges and cables had been established over many decades by Telstra, but deregulation meant that Telstra could no longer claim exclusive use of the facilities. One.Tel correctly anticipated a number of opportunities within the new environment:

- Growth in demand for long distance and overseas telephone calls;
- Rapid take-up of mobile telephony, particularly amongst young people;
- Acceleration in demand for Internet services....but think of all the time you'll save!

The young company's two main competitors in the early years were Telstra and Optus. However both these companies were concerned with building and maintaining infrastructure, and were burdened with high overheads. One.Tel calculated that a smaller low-overhead operation, with ingenious marketing, could undercut the competition and acquire a sizeable section of the market.

2.2.1 Fixed wire services

Fixed wire services were provided by means of One.Tel's own switches. There were a number of these installed in Australia, and later throughout Europe. The telephone subscriber selected the One.Tel service through one of two means, either by dialling a specific prefix before the called number, or by permanent preselection. In both cases, this caused the call to be routed through the One.Tel switch. Thereafter the call was routed to the required number by means of a One.Tel developed LCR (Least Cost Route) software system. This involved selecting the most economically priced carrier from a number with which One.Tel had reselling arrangements. When the call was concluded, a call data record (CDR) was created recording its details. Each carrier would supply files of CDRs to One.Tel at regular intervals. The wholesale costs of these calls were payable by One.Tel to the carriers, and the CDRs were a primary feed into the customer billing system. In theory, One.Tel marked up the wholesale costs and made a margin reselling the calls (One.Tel Annual Report, 2000). As observed by Howarth (2001), many of these services were provided at less than cost, presumably to entice customers into the fold in the hope of selling more valuable services later.

2.2.2 Mobile

One.Tel wanted to build a presence in the massive take up of mobile phones that was occurring during these years. However, it was unrealistic for a small company to compete directly with the local incumbent Telstra, and the largely overseas funded Optus and Vodafone operations. The solution was to establish a strategic partnership with Optus, under which One.Tel became a Mobile Virtual Network Operator (MVNO). Under this arrangement, One.Tel sold mobile phones and services under their own name, even though Optus provided the mobile call services. It was a very successful association. One.Tel brought their marketing skills into play, and gained over 250,000 mobile users as direct customers (One.Tel Annual Report, 2000). Optus gained a significant increase of revenue-producing users with no marketing outlay. The benefits for One.Tel were increased market presence and awareness of its brand, considerable experience in the operation of mobile telephony, together with the profit margin gained on the resale of the services. All this was achieved with no financial outlay upon mobile infrastructure. This area of business was claimed to have been profitable since 1996 (One.Tel Annual, Report 2000).

2.2.3 Internet Service Provider (ISP)

Another growth area that One.Tel correctly anticipated was the increasing demand for Internet services. The One.Net service grew to be one of the largest ISPs in Australia with 150,000 active customers. Again, this was achieved by aggressive marketing and very competitive pricing.

2.3 Organisation and culture

2.3.1 The "can-do" company

One.Tel used to pride itself upon its enlightened management techniques. The company operated a flat non-bureaucratic organisational structure, and was organised into small functional teams. Each team was regularly measured against a set of key performance indicators, and bonuses were paid on achieving them. The directors worked in hands-on mode, and there was almost no middle management (One.Tel Annual Report, 2000). This organisational approach served two main purposes. It was a major differentiator compared to the competing telecommunications companies, and it was also designed to maximise staff productivity at minimum cost.

All offices were open-plan and brightly painted to provide a cheerful motivational atmosphere. One.Tel tried very hard to build a "can-do" mentality, where teams were encouraged to work very hard to achieve desired results. There is evidence that in the early years this approach met with considerable success. Within the IT group, for example, a number of quite sophisticated systems were developed in an unusually short time frame.

One.Tel was an example of a "Random" organization (Constantine, 2001). On the positive side it tried to be egalitarian, innovative, and exciting, while on the other side it also tended to be chaotic and unstable. Management saw their role to be that of preparing the ground for their creative people.

2.3.2 Marketing expertise and branding

One.Tel also saw itself as a very powerful marketer and brand builder. The company presented itself as young, colourful, and dynamic. It claimed that the One.Tel brand was instantly recognisable in seven countries (One.Tel Annual Report, 2000). It deliberately distanced itself as far as possible from the established telecommunications companies, whose image tends to be quite the opposite. It openly targeted the youth market, on the basis that young people often have no allegiance to the established carriers, they were attracted by the company's youthful style, and often have substantial disposable incomes.

2.4 Change of direction - the year 1999

In mid-1999 two very large and influential media companies took substantial shareholdings in the business. The share registry then assumed a very different profile, and the company soon started to expand its horizons. The ownership of One.Tel then stood in the proportions shown in Table 3.

News and PBL invested a combined total of $900 million in One.Tel during 1999 (newsandviews14780, 2001). Each company appointed a high profile non-executive director to the board, Lachlan Murdoch representing News and James Packer representing PBL. Both these companies had a similar agenda, in that they are both major providers of electronic content and they were seeking a vehicle to deliver their content to a worldwide public (Biddlecombe, 2000). The two companies had a considerable level of control over the direction of One.Tel, and they urged the company into worldwide expansion and the delivery of advanced mobile services.

Table 3: One.Tel Limited Ownership

One.Tel Shareholders	
Joint Managing Directors	26.6%
News Corporation	24.0%
Publishing & Broadcasting Limited	23.3%
Public Float	26.1%

Source: One.Tel Annual Report (2000)

Using their investors' funds, One.Tel made two major strategic decisions to improve even further the growth rates they had achieved in the start-up years. The first was to move into overseas markets and the second was to become a direct provider of mobile telephony. These seem ambitious plans for a small start-up telecoms company, but there appears to have been an agreement at board level that the One.Tel business model was scaleable.

2.4.1 Overseas expansion

Table 4: One.Tel Limited Overseas Activity

Overseas Market Penetration - June 2000		
Country	**Wireline Customers**	**ISP Customers**
United Kingdom	527,000	35,000
Holland	222,000	2,800
Hong Kong	143,000	
France	90,000	15,000
Switzerland	50,000	
Germany	25,000	

Source: One.Tel Annual Report (2000)

One.Tel's expansion into overseas markets was pursued aggressively from 1999 onwards. The strategy was to enter deregulated markets at a time when consumers are most receptive to alternative carriers (One.Tel Annual Report, 2000). The initial offerings were Fixed Wire and ISP services which can be provided with minimum initial investment. After building market presence and consumer awareness in each country, the longer-term plan was to enter the mobile arena and offer new generation services. Table 4 indicates the company's overseas market activities.

2.4.2 New generation mobile ("NextGen")

The decision to become a provider of mobile telephony in its own right was a watershed for One.Tel. In order to be a direct supplier of mobile telephony services, it is first necessary to purchase the rights to transmit on a specific range of radio frequencies. It has become the practice for governments to sell these transmission rights at auction. One.Tel made a strategic decision to purchase 1800Mhz radio spectrum covering the five largest Australian capital cities at the auction conducted in May 2000. The company expected to pay no more than $200 million, but ultimately was forced to pay $523 million because of very aggressive bidding by the contenders (Howarth, 2000). This payment represented a very significant portion of the shareholders' funds.

The company was then faced with the establishment of a mobile network infrastructure. A strategic partnership was established with the American commmunications vendor, Lucent Technologies. Under the arrangement Lucent built the mobile infrastructure, and provided deferred payment terms to One.Tel. The cost of this roll-out was to be approximately $1.2 billion and the intention was that this would be paid in instalments from the revenue generated from the mobile network (One.Tel Annual Report, 2000). The great attraction to One.Tel in owning spectrum and providing mobile network services was that it enabled the provision of a range of value-added services. The provision of such services was the first stage in the delivery of content from News and PBL. The downside of acquiring the network, is that it represented the first departure from One.Tel's original strategy of "customers not cables". With the benefit of hindsight, the price paid for the spectrum now seems excessive.

3. ANALYSIS OF THE ONE.TEL CASE STUDY

3.1 IT problems at One.Tel

3.1.1 Systems development

Systems development at One.Tel seems to exemplify the "Initial" level of maturity described by the Carnegie Mellon 's apability Maturity Model. The characteristics of this level are "chaotic, ad hoc, heroic; unorganised, uncoordinated; high variance, unpredictable, crisis management" (Paulk *et al*, 1993). The teams of young and highly paid technicians at One.Tel thrived

in this environment. Systems were delivered in quick time for billing, call centre, dealer management, and debt collection, among many others. Only two significant systems were outsourced: the financial system and a data warehouse used to generate key performance indicators.

3.1.2 The billing system

The One.Tel billing system was one of the first systems to be developed when the new company commenced trading in 1995. The billing system was designed and developed entirely in-house by a team of young and enthusiastic programmers and it was a classic representation of the One.Tel approach to building systems.

In the euphoric atmosphere that prevailed within One.Tel in the early years, the systems developers acquired a high reputation and status. Every time some critical new functionality was required, the development team produced a champion who would work night and day to deliver a result. However, specifications, documentation and standards suffered in this atmosphere. This lack of discipline was understandable and not unusual at this stage in the growth of the firm and its IT systems, but it was problematical, particularly in the case of the billing system. Companies depend on the unfailing timeliness and accuracy of this system for their cash flow, and One.Tel was no exception. In the long term, some serious flaws in the billing system at One.Tel revealed themselves:

- **A long-term dependence upon an inadequate design.** The original system was designed and developed by developers, including programmers, under conditions of great stress and urgency. It should have been viewed as only a short-term solution. However, the basic system remained in production, relatively unchanged, until the termination of business in 2001. The system lacked flexibility, and was supported by inadequately designed database tables. It became impossible to accommodate, within the database, the complex sales plans, which were an important part of One.Tel's marketing strategy. The system became increasingly dependent upon hard-coding to provide functionality. Consequently the individual programs became exceedingly complex, and the system increasingly difficult to maintain.
- **A lack of checks and balances**. The system failed to provide the most basic financial integrity checks. It was impossible to reconcile the value of bills produced in a billing run, either backwards to the calls loaded from the carriers, or forwards to the value finally posted to the General Ledger. There were no checks at each stage of value loaded, value billed, or value posted. In the final year of its operation, the system was producing 600,000 bills per month and, apart from the most basic visual

checking, the company had no means to verify their accuracy. Auditors might have demanded more rigorous controls, but according to Lecky (2001), the auditors claimed surprise at the company's troubles and declared that all had been well in June 2000.

- **Lack of prioritisation and forward planning.** Proper priority was not given to major enhancements required to the billing system. Two conspicuous examples of this were the implementation of the Goods and Services Tax (GST) and the introduction of the NextGen mobile service, both in 2000. In the case of GST, not only were these changes implemented one month late, but they were so poorly executed that it caused billing run times to increase by about 50 per cent. The changes to accommodate NextGen mobile were implemented three months behind schedule, which caused the first users of the new phones to wait three months for their first bill. It would appear that sufficient resources were not allocated in time to meet critical deadlines. On each occasion the billing system suffered from these failures to plan, and the result was large numbers of seriously delayed bills.

3.1.3 Failure of the IT strategy: 1999 the critical year

As we have seen, there was a failure to recognise the weaknesses within the billing system in sufficient time to take effective corrective action. It is true that a great deal of remedial work took place in the last nine months of the system's life, but this was 'too little, too late'.

The principal strategic failure took place in 1999 when One.Tel received its massive injection of funding and started from being a junior local telecommunications company to a full-service international operation. At this time, when funds were plentiful, and substantial change and growth was in prospect, it was necessary to develop a long-term plan. However, no such planning took place, the assumption presumably being that a management-by-crisis approach could continue to deliver systems to serve the company.

In 1999 the One.Tel business plan for the next several years must have been formulated at boardroom level as much of it was published in the Annual Reports for 1999 and 2000. For example, the following events were all clearly on the horizon:

- Significant growth on all business fronts: fixed wire, mobile, and ISP;
- Introduction of cut-price local call plans;
- Introduction of NextGen mobile;
- Introduction of GST from July 2000.

All of these changes were to have a significant impact upon the billing system, which was unable to cope with substantial increases in volume and complexity. As noted by Elliott and Gluyas (2001) "One.Tel ... failed to

reinvest in the advanced customer management systems needed for a mass consumer market".

In 1999, two major projects were commenced which absorbed the majority of the IT funding and most of the talented people. These were a replacement call centre system and a database replication/fallback system. While these projects were not without merit, they were less fundamental than the billing system, which was seen as non-glamorous and technically non-challenging and was starved of resources.

3.1.4 Failure of the IT strategy: increasing billing problems

As described above, the billing system survived relatively intact until the introduction of GST in July 2000, but this caused run times to expand by around 50%. The billing system depended upon one cycle being processed every three days. If the cycle processing time exceeded three days, bills were inevitably produced late. After GST, it was taking 6-7 days to complete a bill cycle. Further, large numbers of bills were calculated incorrectly and needed to be reprinted.

While a rectification team was trying to improve throughput, two further complications were added to the system. Firstly, the data replication team launched their solution, which further increased the load on the struggling system. Secondly, the NextGen mobile team finally completed their input to the billing system, three months behind schedule. This introduced yet more loading and another round of incorrect bills, which needed re-calculation.

At this point, late in the year 2000, the company realised that it had a crisis on its hands and maintenance and improvement of the billing system became the absolute priority. However, the system never recovered from the GST problems in July 2000 and from that time onwards the production of bills was always from three to six weeks behind schedule.

3.1.5 Failure of the IT strategy: effects on the business

The progressive failure of the One.Tel billing system affected the business in a number of ways. Firstly, the delay of up to six weeks in despatching bills had a dramatic effect on cash flow. Gottliebsen (2001) calculated that the six-week delay, combined with the normal six-week delay in receiving call data records from the carriers, meant that One.Tel needed at least $120 million extra in working capital to cover the cash flow gap. Secondly, One.Tel's billing system had a great propensity for producing incorrect bills, for reasons already described. While these were sometimes identified and corrected, often they were not. The One.Tel call centre was constantly besieged with callers making complaints about their bills, and

caller waiting times became intolerable. Customers with incorrect bills are not inclined to pay them. Gottliebsen (2001) further observed that slow paying customers meant an even greater strain on working capital and the amount was growing daily. When the company ceased trading, debtors stood at $170 million (Trute, 2001). Of this, $75 million was more than 120 days old, which effectively meant that these debts would never be collected.

Perhaps the most damning effect of the failure of the billing system was that it brought the company into serious disrepute. For many customers, the bill is the only regular contact that they have with their telecommunications supplier, and frequently it is all the contact they need or want. If the bills do not appear, or are suspected to be inaccurate, then there will be a general loss of confidence in the business. The media then fuelled this loss of confidence with many derisory articles about One.Tel and its problems. Some examples of adverse press have been "the billing system was appalling" (Howarth, 2001) and "some customers never even got a bill" (Elliott and Gluyas, 2001). Gottliebsen (2001) summed it up: "The One.Tel billing problems were like a fault in an aircraft. Discovered on the ground it may mean long delays, but if discovered in the air it is often fatal".

Two critical dates in the history of One.Tel are 17th May 2001, the date of the crisis board meeting, and 30th May 2001, the date the administrators were called in. Originally the major investors, News and PBL, were going to underwrite a rights issue of $132 million to rescue the company. However, by the end of May they had decided that the company was not salvageable. During this period the billing system was thoroughly scrutinised by PBL IT experts. Their conclusions were not published, but it is most likely that they concluded that the system was beyond early repair. The media was also full of anecdotes and witticisms about the parlous state of One.Tel's systems. Perhaps the business may have been able to be saved, but there is a strong likelihood that News and PBL decided that One.Tel's reputation had become so tarnished that they no longer wished to be associated with it.

3.2 IT failure frameworks

Lyytinen & Hirschheim (1987) propose four categories for IT failure:

- correspondence failure: the system fails to the design objectives;
- process failure: the development process fails to produce a system or produces a system that involves overspend of time or budget;
- interaction failure: end users do not properly or intensively use the system;
- expectation failure: inability of the system to meet specific stakeholders' expectations.

The One.Tel case does not clearly meet any individual one of these categories:

- correspondence failure: whilst the design had obvious problems which became apparent during operation, the development did not follow a clear process (a problem in itself?) and formal statements of design objectives do not appear to have been produced – initially, at least, management and users appeared satisfied with the billing system design;
- process failure: again, whilst the development did not follow a formal process, a system was developed and installed, largely to management's budget and time-scale;
- interaction failure: although there were operational problems when the system failed to meet a change in business direction, end users did actually use the system;
- expectation failure: although there were operational problems when the system failed to meet a change in business direction, the stakeholders appeared to be happy with the billing system until the final moments of One.Tel's viability.

What differentiates the One.Tel case is the "can-do" management mentality. The lack of a development methodology, the lack of formal documentation and specifications, the CMM Level 1 heroics, the high level of maintenance, and the quirky operating performance were not seen as failures ... on the contrary, they were lauded and championed as excellent examples of the company ethos. Only when the billing system started to cause customer complaints and not meet accounting practice was the system questioned. Although this failure involves aspects of Lyytinen & Hirschheim's (1987) correspondence and expectation categories, it really forms a fifth category, that we shall term 'business ethos failure'.

We define business ethos failure as the 'inability of an information system to meet requirements because of organisational culture'. This is not correspondence failure, as business and regulatory requirements were never stated in the design objectives; nor is this expectation failure as the expectations of the stakeholders involved were largely met. (It does have some aspects of both 'culture' and 'administration' failure as defined by Poulymenakou & Holmes, 1996, though it not fully covered by these.) However, the billing system should have been developed such that it produced correct invoices and issued those invoices in a timely manner that collected payment within acceptable business practice. The billing system failed because it did not meet these business and regulatory requirements, which were never formally stated because of the company ethos.

4. CONCLUSION

Jodee Rich still claims to be in shock that his company has collapsed and denies that he misled in any way his former business partners, James Packer and Lachlan Murdoch (Davies and Porter, 2001). Certainly, One.Tel was a very open company and no attempt was made to hide the very obvious problems in the billing team, the call centre, or the cash flow problems that became increasingly apparent. It seems more likely that Packer and Murdoch were not misled, but dismayed by the state of the One.Tel infrastructure (and particularly the billing system), which they uncovered in late May 2001.

Jodee Rich concentrated very much on the big picture. Cadzow (2001) suggested his attitude was "why bother with petty concerns like faulty billing systems ... when you can be thinking about global expansion". Paul Budde, communications analyst, suggested two main failures of management as the reasons for the collapse. First, the decision to spend $1 billion building their mobile network, which Budde argued was just ego and macho on Rich's part. Second, the state of the billing and debt-collection systems, which really caused the company quickly to go to the wall (Cadzow, 2001).

Strassman observed "The history of IT can be characterised as the overestimation of what can be accomplished immediately and the underestimation of the long term consequences" (Constantine, 2001). We might ask: if the billing system had been redeveloped, or outsourced, in 1999 would One.Tel still be in business? Further work needs to be done to ascertain other IT failures that might be categorised as 'business ethos failure'. There are other issues consequential from the One.Tel case, for example ethical ones, which also need to be investigated fully.

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