

## CASE PROGRAM

# The Sydney Water Customer Information and Billing System\*

## Introduction

On 29 April 2003 the Board of Sydney Water announced that it would take legal action against PricewaterhouseCoopers Consulting (PwC) over a software project that Sydney Water had abandoned in late 2002 after paying PwC \$29.4 million. Sydney Water chairwoman Ms Gabrielle Kibble AO said the fault for the failure lay with PwC, noting that her organisation had relied on the “skill, judgement, and expertise” of the consulting firm, “and we have been let down”.<sup>1</sup> According to a newspaper story, however, “PwC has vigorously defended the quality of its work and previously said it would fight any litigation.”<sup>2</sup>

In the aftermath of the problems at Sydney Water, agencies and departments across the NSW government slowed their approvals of technology projects, following orders from NSW Treasurer Michael Egan to adopt a new set of guidelines for carrying out such projects. Another subsequent event was the resignation of the managing director of Sydney Water, who according to Kibble offered “health as the motivation for his decision.”<sup>3</sup> NSW Premier Bob Carr was more direct about the change in managing director. In asserting that his government was not responsible for the failed project, Carr said, “Ministers don’t sit there and say, ‘Oh, we’ll go for this technology, we’ll go for that technology.’ They’re decisions made by

---

This case was prepared from published material by Prof Michael Vitale, Australian Graduate School of Management, and Susan Keyes Pearce, University of Sydney. The case was developed solely as the basis for class discussion. It is not intended as an endorsement, a source of primary data, or an illustration of effective or ineffective management.

Cases are not necessarily intended as a complete account of the events described. While every reasonable effort has been made to ensure accuracy at the time of publication, subsequent developments may mean that certain details have since changed. This work is licensed under Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International Licence, except for logos, trademarks, photographs and other content marked as supplied by third parties. No licence is given in relation to third party material. Version 12-01-06. Distributed by the Case Program, The Australia and New Zealand School of Government, [www.anzsog.edu.au](http://www.anzsog.edu.au).



---

<sup>1</sup> “Sydney Water to Commence Litigation”, Sydney Water Corporation press release, 29 April 2003, on line at [http://www.sydneywater.com.au/html/news\\_media/media\\_view.cfm?ID=159](http://www.sydneywater.com.au/html/news_media/media_view.cfm?ID=159)

<sup>2</sup> “PwC ends up in water fight,” Ben Woodhead, *The Australian Financial Review*, 5 August 2003, page 31

<sup>3</sup> “Water hotting up as director jumps out, citing health,” Paloa Totaro, *Sydney Morning Herald*, 21 November 2002. <http://www.smh.com.au/articles/2002/11/20/1037697740363.html>

management. The general manager responsible for that decision left Sydney Water and he's been replaced."<sup>4</sup>

## **Sydney Water**

Sydney Water Corporation was the largest water services provider in Australia, with annual revenue of \$1.4 billion and more than \$13 billion in assets. Formally, Sydney Water was a statutory State corporation, wholly owned by the government of New South Wales. The Corporation held an Operating Licence, "granted to enable and require Sydney Water to provide, construct, operate, manage, and maintain efficient, co-ordinated and commercially viable Systems for providing the Services throughout the Area of Operations."<sup>5</sup> The corporation's services included water, wastewater, and stormwater operations, and were provided to approximately four million people living and working in the Sydney, Illawarra, and Blue Mountains region of New South Wales. Sydney Water's prices were determined by an Independent Pricing and Regulatory Tribunal (IPART), which adjusted prices annually for inflation. For 2002-3 the prices for Sydney Water's services increased by about 2% from the previous year. A typical residential customer paid about \$50 per month for water and wastewater services. A summary of Sydney Water's financial performance is shown in Exhibit 2. The corporation's long-term strategic plan, "WaterPlan 21", described its approach to delivering sustainable water services into the future. A summary of the major projects planned for delivery through 2008 is shown in Exhibit 4.

Prior to the problems with its computer project, Sydney Water had most often been mentioned in the press in relation to the quality of the drinking water it supplied. Most notably, between July and September 1998 Sydney Water issued three "boil alerts" advising the majority of its customers to boil tap water prior to drinking in order to reduce the risk of illness caused by the pathogenic protozoa *Cryptosporidium* and *Giardia*, of which extremely high levels had been detected in the water distribution system. Health authorities did not detect any rise in illness due to *Cryptosporidium* or *Giardia*, even though polls revealed that about one-third of Sydney's population had ignored the alerts and used water directly from the tap. Nevertheless, press coverage was intense, including concern about the reaction of athletes and potential visitors to the Sydney 2000 Olympics.

Michael Knight, the president of the Sydney Games organising committee, commented, "It's a bloody horror at the moment that you can't drink the water."<sup>6</sup> Further embarrassment was caused by the fact that the first contamination scare occurred on the day that American Secretary of State Madeleine Albright and Defense Secretary William Cohen attended meetings in Sydney. As one health publication noted, "In the wake of the incidents, both Mr David Hill (Chair of Sydney Water Corporation) and Mr Chris Pollett (Managing Director) resigned, and two senior managers were dismissed. The issue has been the subject of heated debate in the New South Wales State Parliament with past and present governments accusing

---

<sup>4</sup> "Water debacle not my fault: Carr", Australian IT, 2 May 2003, <http://australianit.news.com.au/common/0,7208,6370995>

<sup>5</sup> The operating licence can be viewed at [http://www.sydneywater.com.au/html/about\\_us/oper\\_licence.cfm](http://www.sydneywater.com.au/html/about_us/oper_licence.cfm)

<sup>6</sup> "Once again, Sydney's water is undrinkable", Chehalis River Council, August 1998, <http://www.crcwater.org/issues5/19980827whycare.html#30>

each other of being responsible for the situation. Press reports have criticised both political parties for the withdrawal of large amounts of profits from Sydney Water Corporation over recent years.”<sup>7</sup>

## **PricewaterhouseCoopers Consulting**

Following the collapse of Arthur Andersen, PricewaterhouseCoopers (PwC) was the largest of the “Big Four” accounting firms in Australia, with budgeted revenues of \$1.14 billion. Tony Harrington, the Managing Director of PwC Australia, said that in the 2001-2002 financial year PwC Consulting provided 20-25% of the firm's revenue, or about \$285 million.<sup>8</sup> Worldwide, PwC Consulting had revenues of US\$5 billion in the nine months ending March 2002, down from US\$5.6 billion the year before.<sup>9</sup> In October 2002 IBM purchased PwC Consulting for US\$3.5 billion. Two years earlier Hewlett-Packard (H-P) said it was prepared to pay as much as US\$18 billion for PwC Consulting, but abandoned the plan after shareholders criticised the deal and reduced the value of H-P shares by 40% in two months.<sup>10</sup> Following the withdrawal of the H-P offer, and under increasing pressure from American regulators to separate consulting from auditing, PwC finally announced a plan to rebrand PwC Consulting as “Monday” and float the unit as a separate company. The IBM offer came just two weeks later.

IBM renamed its acquired assets IBM Business Consulting Services and folded them into its consulting arm, IBM Global Services. Merging the businesses in Australia was more complicated than anywhere else in the world, because IBM owned only 54% of the Australian operation; Telstra and Lend Lease owned the remainder in roughly equal proportions. Lend Lease spokesman Roger Burrows said, “We've made no secret of the fact that Lend Lease views the [IBM Global Services] investment as non-core, and that it makes absolutely no sense for us to own it. ... [however] We are not a stressed seller. We could still be holding this asset in two years.”<sup>11</sup> IBM Global Services had about 10,000 employees in Australia and New Zealand, while PwC Consulting had approximately 1,200 consultants plus support staff.

## **The Customer Information and Billing System**<sup>12</sup>

By the time it was cancelled, the Customer Information and Billing System (CIBS) had been underway for more than four years. The overall goal of the project was to improve customer service and increase efficiency by replacing a number of separate systems with one integrated system. An expression of interest (EOI) for the system was issued in April 1998 and closed the

---

<sup>7</sup> *Health Stream*, issue 11, September 1998, <http://www.waterquality.crc.org.au/hs/hs11web.htm#SYDNEY>

<sup>8</sup> “BRW Top 100 Accounting Firms,” Kath Walters and John Stensholt, BRW, volume 24 number 28, 18 July 2002, <http://brw.com.au/Stories/20020718/15630.aspx>

<sup>9</sup> “Goodbye Monday”, *The Economist*, 1 August 2002,

[http://www.economist.com/displayStory.cfm?story\\_ID=1264851](http://www.economist.com/displayStory.cfm?story_ID=1264851)

<sup>10</sup> “IBM pays bargain price for PwC”, Leon Gettler, *The AGE*, 1 August 2002,

<http://www.theage.com.au/articles/2002/07/31/1027926912676.html>

<sup>11</sup> “Blue Brews over GSA Stake”, James Riley, *Australian IT*, 25 February 2003,

<http://australianit.news.com.au/articles/0,7204,6034736%5e15306%5e%5en>

<sup>12</sup> Much of this section is based on the Auditor-General's “Review of Sydney Water's Customer Information and Billing System”, part of the Auditor-General's 2003 Report to Parliament, volume one, which was tabled 1 May 2003. This document will be referred to in subsequent notes as “Review”. It is available on the Internet at [www.audit.nsw.gov.au/agrep03v1/SpecialRevSydneyWaterCIBS.pdf](http://www.audit.nsw.gov.au/agrep03v1/SpecialRevSydneyWaterCIBS.pdf)

following month with 27 responses. A “value management study” concluded that the preferred option was total replacement of Sydney Water’s existing systems, although the cost of upgrading those systems was between \$9.0 and \$14.0 million, compared to an estimated \$38.2 million for building a new system.<sup>13</sup> In July 1998 the EOI report was submitted to the General Manager – Retail for approval, but a decision was delayed until October due to the contamination incident described earlier. A request for tender was then prepared and issued to six organisations in early March 1999.<sup>14</sup> The tender closed six weeks later with five responses. PwC and MITS Ltd were short-listed for the project, and in December 1999 Sydney Water’s Tender Evaluation Committee recommended awarding the project to PwC.

The Board of Sydney Water approved the contract in February 2000 subject to a review of the proposal by an external adviser and consideration of that review by Chair Gabrielle Kibble. The review was completed a week later, and the Managing Director wrote to the Chair requesting her sign off on the project. A few days later Kibble met with the Managing Director and the project sponsor, raising with them “issues on the need for a clear statement about all the existing systems, their functionality and age, how they are being replaced, the ability to contain the costs and risk of the project, and the ability of the system to meet Sydney Water needs.”<sup>15</sup> After receiving additional information from the project sponsor, Kibble indicated that she was now willing to sign off on the project, and CIBS officially began on 27 March 2000.

CIBS was the largest system project ever undertaken by Sydney Water, and the most complex – interfaces with 12 internal systems and 60 external parties were required. The system was to be built on a core software package purchased from Severn Trent Systems, a subsidiary of a major UK water company.<sup>16</sup> The package had already been adopted by Alinta Gas in Perth and was subsequently adopted by the Melbourne electric utility Powercor. The design of CIBS separated it into three discrete projects:

- R1 – for major customers
- R2 – for commercial land developers
- R3 – the largest phase of the project, a core customer information and billing engine

In the event, R1 was fully implemented, and R2 partially implemented. Exhibit 3 shows the original and modified schedules for the installation of R2 and R3.

Following the signing of the principal contract with Sydney Water in June 2000, PwC undertook a “technical proof of concept” (TPOC) exercise to demonstrate that the collection of technologies chosen for CIBS would work together. The TPOC was completed in July 2000, and was reviewed by Ernst & Young in December 2000. The Auditor-General’s report noted that “In our view, the importance of TPOC was not fully appreciated by Sydney Water. ...

---

<sup>13</sup> Review, page 21

<sup>14</sup> Review, page 33. The Auditor-General reported that he was not able to locate a copy of the final business case or a description of the tendering process.

<sup>15</sup> Review, page 34

<sup>16</sup> Severn Trent Systems changed its name to Aseriti in 2002

Sydney Water may not have proceeded with CIBS if it had done a timely analysis of the Technical Proof of Concept.”<sup>17</sup>

In July 2000 Sydney Water IT was formed as the result of the reintegration of the Information and Communication Systems division of Australian Water Technologies Pty Ltd (AWT).<sup>18</sup> Sydney Water IT reviewed the CIBS architecture documents and gave feedback to PwC. In October 2000 Sydney Water IT published its CIBS architecture review document, which found that the system failed 19 of 20 requirements. A report by consulting firm DMR in February 2001 noted “that there was an ongoing conflict between Sydney Water IT and PwC over the level of completeness of the CIBS architecture specification. Sydney Water IT was unable to provide timely information to PwC due to technical architectural standards being incomplete, and concerns over probity due to a major tender [for CIBS] being in progress.”<sup>19</sup> In its response to a draft of the Auditor-General’s report, Sydney Water said, “The DMR report questioned the evaluation criteria used in this [Sydney Water IT] review. Nonetheless, Sydney Water IT worked with the CIBS project team to ensure that, as far as possible, the CIBS system was compatible with its IT architecture framework.”<sup>20</sup>

In addition to questions about technology and architecture, the project encountered a number of human resource issues. The DMR report noted a lack of experience on the Sydney Water project team in dealing with large, fixed price IT contracts, and a lack of high-level representation from legal and corporate finance throughout the project. The February 2001 report also recommended that Sydney Water should consider the use of “an experienced contract manager to manage the day to day relationship with the contractor, PwC”.<sup>21</sup> Such a person was hired in February 2002. A March 2002 report by Sydney Water’s internal auditor questioned the ability of Sydney Water staff to comply with the terms of the contract requiring that they should be experts in certain areas.<sup>22</sup> In April 2001 Sydney Water IT questioned the capability of the PwC project manager, who resigned to pursue other opportunities and was replaced. In the same month a quality assurance report by PwC commented that the PwC team was “inexperienced in systems integration and package implementation” and that the project management team was “working at too low a level”.<sup>23</sup> PwC addressed these issues, but the Auditor-General’s review noted that concerns persisted and that “the breakdown in communication between all parties became more pronounced over time.”<sup>24</sup>

Recognising the importance of good project governance, Sydney Water formed a CIBS Executive Steering Committee, the role of which was to monitor the conduct of the project and provide guidance to the project team, and facilitate resolution of any problems or issues that could impact the progress of the CIBS project. The project sponsor was responsible for

---

<sup>17</sup> Review, pages 17 and 18

<sup>18</sup> Review, page 34. AWT was the trading arm for Sydney Water services, including technical planning, design and building, and engineering and environmental services. AWT’s employees worked with corporate and government clients in Australia and overseas.

<sup>19</sup> Review, page 25

<sup>20</sup> Review, page 54

<sup>21</sup> Review, page 22

<sup>22</sup> Review, page 23

<sup>23</sup> Review, page 23

<sup>24</sup> Review, page 24

approval, acceptance, and control of the project budget, resources, schedule, and deliverables.<sup>25</sup> The committee was made up of Peter Mayhook, the Project Sponsor; the Sydney Water and PwC Project Managers; Judi Hansen, the General Manager – Strategy and Change; and Paul Freeman, the General Manager – Distribution. Hansen and Freeman attended only some meetings.<sup>26</sup> Exhibit 6 describes some of the issues raised at meetings of the CIBS Executive Steering Committee.

In view of the size and importance of CIBS, the Board of Sydney Water requested management to provide bi-monthly project updates. Some of the issues raised in these updates are described in Exhibit 7. The Auditor-General's Review commented, "These reporting requirements were not adhered to, and many reports became less than detailed, and lacked pertinent information... In September 2002 the Board was still supporting the delivery of a fully tested CIBS solution. The Chairman advised us that the first time she became aware that there was any significant doubt about the delivery of outcomes from CIBS was at a briefing in October 2002 ... It was after that meeting that she recommended that the Board terminate the project."<sup>27</sup> Following the Board's action, the State Treasurer asked the Auditor-General to review the project and report his findings to Parliament.

Alex Walker, the former Managing Director of Sydney Water (see Exhibit 5), had a different view. Given an opportunity to respond to the Auditor-General's comments in a draft of the report, Walker wrote, "These statements imply that management was misleading the Board until the last minute. This is incorrect. Minutes of various Board meetings throughout 2002 demonstrate that there was ongoing discussion about a whole range of problems. As a matter of logic, terminating the project was always an option. However that option had to be considered in the context of the desired objectives of the project and the investment to date. Terminating the project at any time would be the last and most difficult option. ... The only aspect of the project which took both management and the Board by surprise was the unacceptably high rate of errors in the software when it was belatedly delivered and full scale acceptance testing finally began. The extent and implications of these errors began to emerge in September when I informed the Board that, for the first time, I had grounds to doubt the quality of the delivered system and an expert review [by Accenture] was commissioned. This was the final straw!"<sup>28</sup>

## **The Report**

The Auditor-General's report, tabled in the NSW Parliament on 1 May 2003, was a continuation of the involvement of the Auditor-General's office with the CIBS project. The 2001 and 2002 Auditor-General's reports to Parliament noted delays and increased costs, as did the 2002 Statutory Audit Report of Sydney Water. The Audit Office raised concerns about CIBS costs at a meeting of the Sydney Water Audit Committee on 18 September 2002. "We believe," the Auditor-General's report to Parliament said, "the Managing Director advised us that the project was on track, and that our concerns were, in effect, misguided. He contended

---

<sup>25</sup> Review, page 33

<sup>26</sup> Review, page 34

<sup>27</sup> Review, pages 15 and 16

<sup>28</sup> Review, page 76

that there were valid reasons for the increased costs, and it was expected that projects of such size and complexity would experience delays. The Directors present accepted the Managing Director's view. It was unexpected, on our part, when the project was terminated about one month after that meeting."<sup>29</sup> Alex Walker, describing the same meeting, wrote, "I do not recall or have a note of what was said. Nor is there any such record in the minutes of the meeting. This was a meeting where there was discussion on a range of issues relating to signing of the annual accounts. Yet the Audit Office representatives did not challenge any of the submissions made to the meeting."<sup>30</sup>

The Auditor-General's report was 77 pages long, including responses from Sydney Water, PwC, and Alex Walker. The report made 24 findings, all negative except the last: "The introduction of CIBS R2, albeit with less functionality [than planned], is a positive outcome from the project."<sup>31</sup> Other findings included:

- The Board did not oversee the project as effectively as it might have. Its understanding of the project, in light of its complexity, was limited.
- Sydney Water recognised that it needed a business improvement process, but during the project it reverted to only implementing a computer system.
- There was a belief in Sydney Water that IT projects of this nature and complexity would inevitably go over budget and be delayed.
- The culture of Sydney Water suggests a belief that the outsourcing of major projects will effectively transfer all risks to the contractor.<sup>32</sup>

The review also made 9 recommendations, specific to Sydney Water but believed to be applicable to the public sector as a whole. These included:

- Communication in an organisation should be complete and timely, all the way to Board level (see Exhibit 9).
- Major projects should have the best people involved from the outset.
- A prototype of the IT solution should be developed and proven at an early stage.<sup>33</sup>

## **The wash-up**

Immediately following the tabling of the report by the NSW Auditor-General on the Sydney Water system, NSW Treasurer Michael Egan directed all NSW government agencies to follow new procedures for all information and communications technology projects costing more than \$10 million. Agencies would now be required to post on their website a business case giving the reason for the project, the cost of the project, and the services that the project would provide. In addition, agencies would be required to report to Treasury every three months on whether the cost, schedule, or functionality of the project had changed in any way.<sup>34</sup> Brad

---

<sup>29</sup> Review, page 15

<sup>30</sup> Review, page 76

<sup>31</sup> Review, page 32

<sup>32</sup> Review, pages 12 and 13

<sup>33</sup> Review, page 14

<sup>34</sup> Hawker-Britton News, May 2003. <http://www.hawkerbritton.com.au/news/2003-may.htm>

Hazard, the Opposition spokesman on utilities, responded to the new requirements by saying that \$61 million had now gone “down the gurgler” while the government simply tried to shift the blame onto bureaucrats.<sup>35</sup> Of the \$61 million, \$23.0 million represented internal Sydney Water costs, while \$38.0 million had been paid to external parties, including \$29.4 million to PwC. The Auditor-General believed that most of the \$61.0 million would be written off.<sup>36</sup>

The Australian Services Union, which represented the 62 customer service representatives who had been assigned to the CIBS system, announced that its members “are protecting their pay and conditions as Sydney Water starts mopping up the mess of its multi-million dollar CIBS billing system collapse....ASU members are also securing an extra six weeks pay at the higher CIBS project rate as well as management’s agreement to review all CSRs, taking into consideration skills we’ve gained during the CIBS project. It means that although CIBS has failed, CSRs assigned to CIBS are going back to their old jobs with full recognition of the expertise they’ve gained.”<sup>37</sup>

As Minister for Information Technology, Energy, Forests, and Western Sydney, the Honourable Kim Yeadon MP, Labor Party member from Granville, had been the Minister responsible for Sydney Water since 1999. Yeadon easily won re-election in the March 2003 NSW State Elections. After the post-election shakeup of the Carr government, however, Yeadon was no longer a Minister. The Energy and Utilities portfolio was taken over by The Honourable Frank Sartor, formerly the Lord Mayor of Sydney. Within his first month, Sartor announced the appointment of a new Managing Director of Sydney Water, Greg Robinson, and commented publicly on the Auditor-General’s review: “You can always look back in hindsight ... the simple fact is the government, as soon as it discovered the problem, acted decisively and so did the board, it acted decisively and we've got to make sure this doesn't happen again - any waste of public money is unacceptable.”<sup>38</sup>

After a few months’ on the job, Sartor had formed the view that Sydney Water was probably too large. He told the press, “It has got massive complexity even though it has been downsized substantially. There are drivers in different directions.”<sup>39</sup> Press reports suggested that others shared Sartor’s view about the organisation’s size. A column in late August 2003 said, “Sydney Water staff can’t help but be cynical as they watch new managing director Greg Robinson soften up the public for an imminent round of sackings. Claims that the body is in shambles, fed to the media by Bob Carr’s spin doctors, have caused Sydney Water employees to ask if that’s so, weren’t the senior public servants in charge responsible? They await cuts of 1000.”<sup>40</sup>

---

<sup>35</sup> “Water bill fiasco sends \$61m down the drain,” Paloa Totaro, Sydney Morning Herald, 2 May 2003.

<http://www.smh.com.au/articles/2003/05/01/1051382046556.html>

<sup>36</sup> Review, page 14

<sup>37</sup> “Members protected after CIBS collapse”, Greg Turner and John Tierney, *ASU People*, 19 December 2002,

[http://asuservices.labor.net.au/asupeople/water/20021219\\_CIBSsa](http://asuservices.labor.net.au/asupeople/water/20021219_CIBSsa)

<sup>38</sup> “Water debacle not my fault: Carr”, news.com.au, 2 May 2003,

[http://www.news.com.au/common/story\\_page/0,4057,6370995%255E15306,00.html](http://www.news.com.au/common/story_page/0,4057,6370995%255E15306,00.html)

<sup>39</sup> “Shake-up on way for utility”, Anne Davies and Stephanie Peatling, Sydney Morning Herald, 4 August 2003, <http://www.smh.com.au/articles/2003/08/03/1059849279027.html>

<sup>40</sup> “It’s bath time at the waterworks”, Alex Mitchell and Candace Sutton, *The Sydney Sun-Herald*, 24 August 2003, page 28



**Exhibit 1  
Time and Cost Estimates for CIBS**

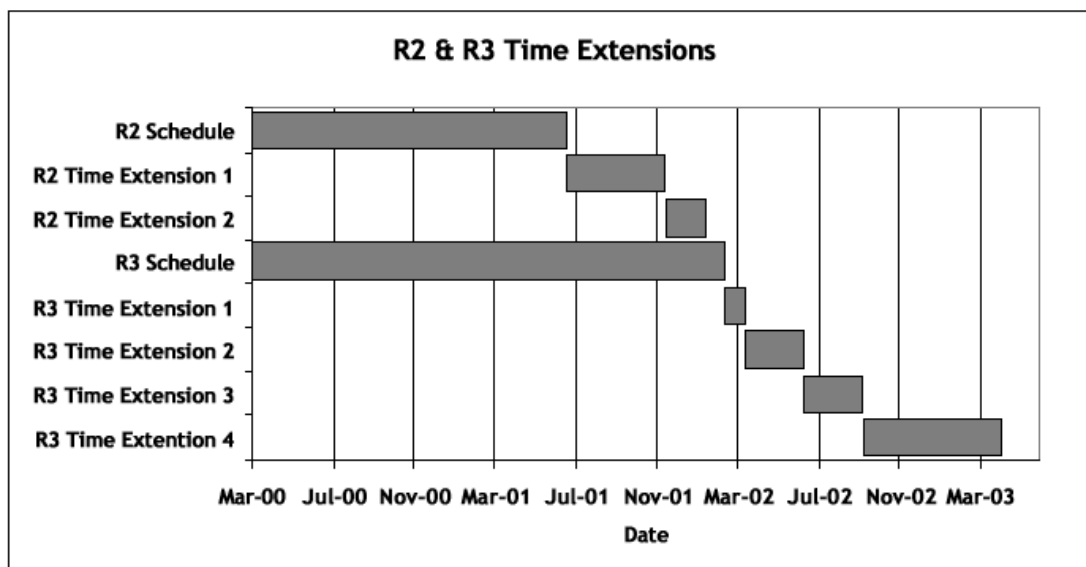
Date	Estimated Delivery	Estimated Cost (millions)
June 2000	February 2002	\$ 38.2
April 2001	March 2002	\$ 51.0
August 2001	June 2002	\$ 57.4
February 2002	September 2002	\$ 57.4
March 2002	September 2002	\$ 60.0
September 2002	March 2003	\$ 114.5
October 2002	March 2003	\$ 135.1

**Exhibit 2  
Sydney Water Financial Performance**

CONSOLIDATED FINANCIAL PERFORMANCE IN BRIEF	2001-02	2000-01
Total revenue before capital contributions	\$1,356.0m	\$1,319.2m
Total expenses	\$1,202.7m	\$1,170.3m
Profit before capital contributions	\$153.3m	\$148.9m
Profit after capital contributions	\$334.5m	\$283.5m
Profit after income tax and capital contributions	\$183.1m	\$163.2m
Recommended dividend	\$110.0m	\$53.4m
Debt: equity	19%	18%
Return on net operating assets	2.3%	2.4%

Source: Sydney Water annual report 2001 – 2002

**Exhibit 3  
Implementation Schedule for R2 and R3**



Source: Auditor-General's Review of CIBS, page 19

## Exhibit 4 Sydney Water Major Projects in Progress

**MAJOR WORKS IN PROGRESS**

AT 30 JUNE 2002	EXPENDITURE TO 30 JUNE 2002 \$MILLIONS	CURRENT ESTIMATE AS AT 30 JUNE 2002 \$MILLIONS	FORECAST COMPLETION DATE AS AT 30 JUNE 2002
Blue Mountains Sewerage – Stage 2	3.8	71.2	Dec 2007
Bondi STP – Reliability Improvement and Modernisation Program	2.9	95.0	Dec 2006
Coalcliff, Stanwell Park, Stanwell Tops and Otford Sewerage	2.2	18.0	Dec 2003
Critical Water Main Program	1.3	36.3	Jun 2005
Customer Information and Billing System (CIBS)	52.2	68.3	Sep 2002*
Gerringong–Gerroa Sewerage Scheme	50.5	55.0	Sep 2002
IICATS Wastewater	33.4	54.0	Dec 2004
Illawarra Wastewater Strategy	32.0	197.0	Jan 2005
North Head STP Upgrade	3.7	225.0	Dec 2007
Penrith STP Amplification Stage 8	1.2	30.0	Dec 2003
Rouse Hill STP Amplification Stage 1 Phase 2	14.5	16.0	Dec 2002
SCADA – Treatment Plants	38.7	93.5	Dec 2005
Overflow Abatement Program	135.5	1,025.0	ongoing
St Mary's Lime Stabilised Grade A Biosolids Facility	17.3	21.0	Dec 2002
SWSOOS Trunk Sewer Risk Reduction Program (Stage 1)	32.1	53.1	Jun 2004
The Oaks–Oakdale Sewerage Scheme	9.4	39.1	Jun 2003
Upper Georges River Wastewater Strategy	4.6	277.0	Jun 2008
Water Meter Replacement Program	33.6	90.0	ongoing
West Camden STP Amplification and Upgrade	0.6	40.0	Jun 2004

\* Since 30 June 2002, the forecast completion date has been revised to the second half of 2002–03.

Source: Sydney Water Annual Report 2002

## Exhibit 5 Sydney Water Senior Executives

<b>Date</b>	<b>Chair</b>	<b>Managing Director</b>	<b>CIBS Sponsor</b>
30 June 1997	John McMurtrie	Paul Broad	John Parker
29 September 1997	John McMurtrie	Christopher Pollet (Acting)	John Parker
21 November 1997	David Hill	Christopher Pollet	John Parker
May 1998	David Hill	Christopher Pollet	Geoff Morris
19 August 1998	David Hill	Warren Hart (Acting)	Geoff Morris
1 September 1998	Gabrielle Kibble	Warren Hart	Geoff Morris
October 1998	Gabrielle Kibble	Warren Hart	Dennis Furini
16 November 1998	Gabrielle Kibble	Alex Walker	Dennis Furini
April 1999	Gabrielle Kibble	Alex Walker	Peter Mayhook
April 2001	Gabrielle Kibble	Alex Walker	Alex Walker
30 November 2002	Gabrielle Kibble	Ron Quill (Acting)	Project Terminated

Source: Auditor-General's Review of CIBS, pages 33 – 46

**Exhibit 6**  
**Some of the Issues Raised at CIBS Executive Steering Committee Meetings**

Date	Issues
16 October 2000	<ul style="list-style-type: none"> <li>▪ Request for project variation of \$1.3 million</li> <li>▪ Report from Internal Audit identifying project risks</li> </ul>
23 April 2001	<ul style="list-style-type: none"> <li>▪ Request that PwC replace its project manager due to lack of expertise (request granted one week later)</li> <li>▪ DMR Consulting engaged to assist Sydney Water project manager to manage the project</li> <li>▪ Managing Director became the new Chairman of the committee, and the General Manager – Customer Services and the head of Sydney Water IT joined the committee</li> </ul>
13 Jun 2001	<ul style="list-style-type: none"> <li>▪ Concerns from the business that benefits were not going to be achieved and that some deliverables would lead to more work at the business level</li> </ul>
10 Oct 2001	<ul style="list-style-type: none"> <li>▪ Concerns that the design of R3 was still incomplete</li> </ul>
12 Nov 2001	<ul style="list-style-type: none"> <li>▪ Volume of data to be converted was double what was anticipated; implementation schedule will be impacted</li> <li>▪ User testing behind schedule and needs management attention</li> </ul>
13 Feb 2002	<ul style="list-style-type: none"> <li>▪ Significant disagreement between Sydney Water and PwC about outstanding disputed costs</li> </ul>
12 Apr 2002	<ul style="list-style-type: none"> <li>▪ Concern over long term technical viability of CIBS</li> <li>▪ Agreed to invite GM – Finance and GM – Asset Management to attend meetings</li> <li>▪ Significant risks noted to September 2002 “go live” date</li> </ul>
17 May 2002	<ul style="list-style-type: none"> <li>▪ Development and testing late</li> <li>▪ Project sponsor (Managing Director) notes lack of “overwhelming sense of confidence” that the planned actions would correct known problems</li> </ul>
14 Jun 2002	<ul style="list-style-type: none"> <li>▪ Significant gaps in expertise on the project team identified</li> <li>▪ September 2002 “go live” date in serious jeopardy, unlikely to be achieved without a significant increase in project risk</li> </ul>
10 Jul 2002	<ul style="list-style-type: none"> <li>▪ 102 critical and significant defects found in system testing; PwC expects to reduce the number to 10 by month end</li> </ul>
14 Aug 2002	<ul style="list-style-type: none"> <li>▪ 45 critical and significant defects outstanding</li> <li>▪ Data conversion below expectations</li> <li>▪ Batch performance testing running behind schedule</li> <li>▪ Acceptance criteria for R3 not defined or agreed</li> <li>▪ Legal advice being sought regarding respective responsibilities for testing</li> </ul>
22 Nov 2002	<ul style="list-style-type: none"> <li>▪ Need to agree the highest priority change requests to enable R2 to function to the required level</li> <li>▪ Additional funding required to implement these changes</li> </ul>

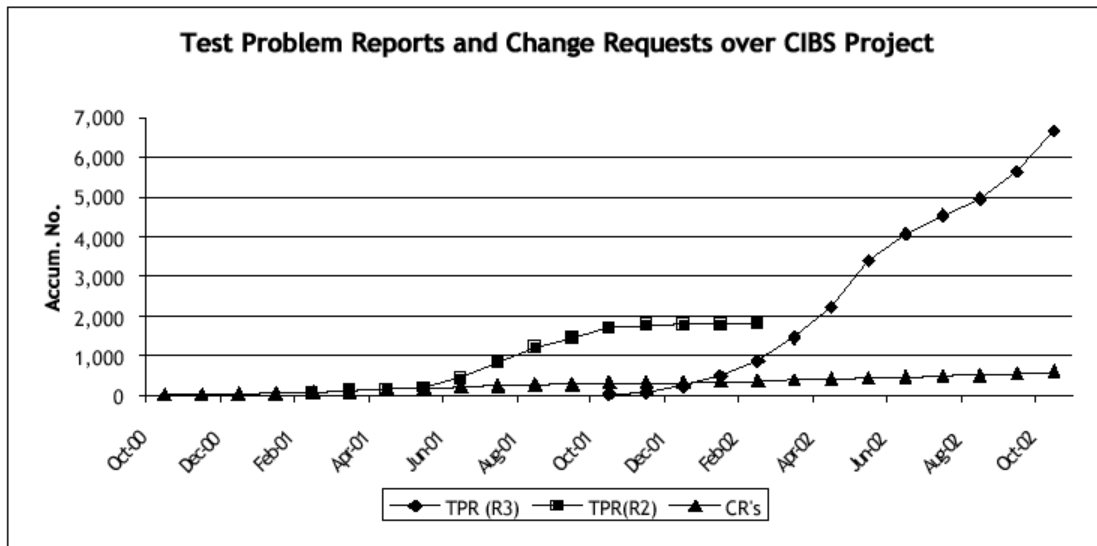
Source: Auditor-General's Review of CBIS, various pages

**Exhibit 7**  
**Progress Reports to Sydney Water Board and Board Actions**

Date	Items Noted in Report/Actions Taken
11 Apr 2001	<ul style="list-style-type: none"> <li>▪ R1 implemented</li> <li>▪ Report from DMR Consulting concluding that they saw “no reason to believe that the CIBS project should fail”</li> <li>▪ Approved contract variation of \$4.8 million and additional capital funding of \$8.0 million</li> <li>▪ Made Managing Director Alex Walker directly accountable for CIBS</li> </ul>
20 Jun 2001	<ul style="list-style-type: none"> <li>▪ R2 into construction phase and having problems with testing, posing a threat to on-time delivery</li> </ul>
15 Aug 2001	<ul style="list-style-type: none"> <li>▪ R3 rescheduled from March 2002 to June 2002</li> <li>▪ Approved contract variations of \$2.1 million for borrowing costs, \$800,000 for R2, and \$6.0 million for essential business changes and sharing of costs associated with delayed implementation of R3</li> </ul>
17 Oct 2001	<ul style="list-style-type: none"> <li>▪ R3 tracking on time and to budget</li> <li>▪ R2 anticipated to go live in November 2001</li> </ul>
21 Nov 2001	<ul style="list-style-type: none"> <li>▪ R3 progressing to plan</li> <li>▪ R2 live and “although there are some difficulties, it is working well”</li> </ul>
19 Dec 2001	<ul style="list-style-type: none"> <li>▪ Project costs tracking to approved budget</li> <li>▪ R2 “proven to be sound with minimal technical problems experienced”</li> </ul>
20 Feb 2002	<ul style="list-style-type: none"> <li>▪ Most work streams within R3 progressing to plan</li> </ul>
20 Mar 2002	<ul style="list-style-type: none"> <li>▪ Detailed review of all project-to-date and anticipated future costs has been undertaken</li> <li>▪ “Contra-benefits” and manual workarounds identified, which will reduce estimated benefits</li> <li>▪ Additional funds will be required to address any further delay</li> <li>▪ Commissioning date for R3 is now mid-2002</li> <li>▪ Resolved to approve the continuation of CIBS</li> <li>▪ Approved variation of \$2.2 million for financing costs, \$1.0 million for labour on-costs, and previously incurred costs of \$4.7 million</li> <li>▪ Approved additional funding of up to \$8.3 million to be subject to decision by Chairman and Managing Director</li> </ul>
17 Apr 2002	<ul style="list-style-type: none"> <li>▪ R3 scheduled for September 2002</li> <li>▪ R2 successfully implemented</li> </ul>
19 Jun 2002	<ul style="list-style-type: none"> <li>▪ Recommendation to defer commissioning date beyond September 2002</li> <li>▪ Resolved to defer commissioning date</li> </ul>
17 Jul 2002	<ul style="list-style-type: none"> <li>▪ Series of alternative implementation dates currently being analysed</li> <li>▪ Resolved to commit to revised implementation date of April 2003</li> </ul>
21 Aug 2002	<ul style="list-style-type: none"> <li>▪ Commissioning date now planned for mid-March 2003</li> <li>▪ Testing experts from Accenture appointed</li> <li>▪ PwC Consulting acquired by IBM Australia</li> <li>▪ Accurate cost estimates cannot be prepared until further testing is complete</li> </ul>
18 Sep 2002	<ul style="list-style-type: none"> <li>▪ Commissioning date planned for mid-March 2003</li> <li>▪ Project has completed a highly successful “dress rehearsal” associated with preparing the business for CIBS</li> <li>▪ Additional funds will be required</li> <li>▪ Board commissions Accenture to carry out an independent review of CIBS</li> </ul>
16 Oct 2002	<ul style="list-style-type: none"> <li>▪ Board receives Accenture report, which finds that the March 2003 “go live” date was unachievable and that there were doubts as to whether the CIBS solution could work or would meet Sydney Water’s business requirements</li> <li>▪ Indications from testing are that there is a “concerningly” high level of defects in CIBS, and that the management team’s capacity to resolve the defects in a timely manner is reaching saturation</li> <li>▪ PwC advises that mid-March commissioning date is still achievable but is difficult</li> <li>▪ Resolved not to proceed with CIBS in its current form</li> <li>▪ Requested project team, on an urgent basis, to develop options to redefine the project to achieve best outcomes for Sydney Water</li> </ul>
30 Oct 2002	<ul style="list-style-type: none"> <li>▪ Resolved to terminate the CIBS contract due to the contractor’s inability to complete the project in accordance with that contract</li> <li>▪ Resolved to explore options for recovery of any loss or damage suffered by Sydney Water, including pursuit through common law</li> </ul>

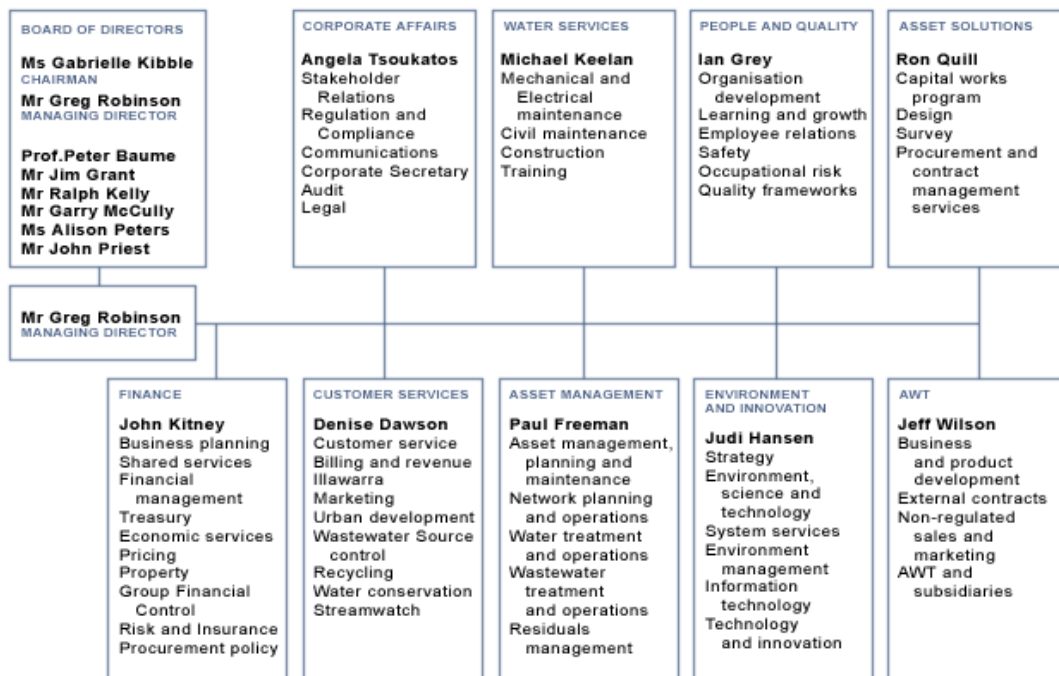
Source: Auditor-General’s Review of CIBS, various pages

## Exhibit 8 Testing of R2 and R3



Source: Auditor-General's Review of CBIS, page 26

## Exhibit 9 Sydney Water Management Structure as at 1 May 2003



Source: [www.sydneywater.com.au](http://www.sydneywater.com.au)