

# Australia: Winning in the Global ICT Industry

Final Report

December 2002



3 December 2002

Senator the Hon. Richard Alston  
Minister for Information, Communication, Technology and the Arts  
Parliament House  
CANBERRA ACT 2600

Dear Minister,

On behalf of McKinsey & Company, we are pleased to submit to you and the Framework for the Future Steering Committee this report—*Australia: Winning in the Global ICT Industry*.

We wish to thank all those who contributed to this report. We have had invaluable help and support from those in industry, from the Department of Communications, Information, Technology and the Arts, and from our McKinsey & Company colleagues in Australia and around the world.

*Australia: Winning in the Global ICT Industry* is a comprehensive assessment of the current state, trends and issues in the global Information, Communications and Technology industry—and of the likely opportunities for Australian companies.

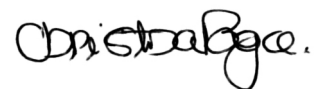
In researching this information, and drawing on the knowledge and experience of many of our colleagues and industry representatives locally and globally, we have been struck by the rapid change under way in the industry and the potential for Australian companies to capitalise on the opportunities this change creates.

We trust that the Framework for the Future Steering Committee will find *Australia: Winning in the Global ICT Industry* an insightful and vital platform for the creation of thoughtful long-term policy. We also hope that industry leaders find the report a useful resource to draw on in formulating their strategies and building success.

Yours sincerely,



Adam Lewis  
Director  
Managing Partner, Australia and New Zealand



Christy Boyce  
Principal

# Contents

1.0 Foreword	3
2.0 Executive Summary	6
3.0 Software	22
3.1 Client/Server Operating Systems	32
3.2 Systems and Network Management	40
3.3 Middleware	49
3.4 Security Applications	54
3.5 Applications Development	64
3.6 Mobile and Embedded Operating Systems	69
3.7 Horizontal Applications	79
3.8 Vertical Applications	88
3.9 Consumer Applications	97
4.0 IT Services	105
4.1 Professional IT Services	112
4.2 Product Services	124
4.3 Outsourcing Services	136
5.0 Hardware Sector	148
5.1 Semiconductors	157
5.2 Computer Systems	167
5.3 Data Storage	177
5.4 Networking Equipment	186
5.5 Handsets and Handhelds	198
5.6 Video CPE	207

## 1.0

# Foreword

In collaboration with industry, the Commonwealth Government is developing a strategic framework for the Information and Communications Technology (ICT) industry. This undertaking—the Framework for the Future project—is guided by a Steering Committee chaired by the Minister for Communications, Information Technology and the Arts, Senator the Hon. Richard Alston. Two working groups are assisting in this work—the Industry Mapping working group and the Foresighting working group.

As part of this project, the Government wished to obtain a perspective on the opportunities and challenges that the Australian ICT industry could face over the next 5 to 10 years, given likely changes in the global environment. McKinsey & Company was asked to provide this strategic overview for the Framework for the Future Steering Committee. Our brief called for a 'strategic business perspective of the ICT industry in Australia in a global context, including an analysis of the likely trends and drivers

in the global industry, and of Australia's ICT performance and position in that environment'.

In undertaking this work, one of our first tasks was to define the ICT industry. This in itself is a challenge. The industry is evolving swiftly as a result of rapidly changing technology and shifting usage. Its boundaries are changing and blurring. For example, software and hardware providers are increasingly moving into the IT services sector and IT services companies are increasingly packaging their offerings as 'products' and drawing on their experiences with customers to develop software offerings. Not surprisingly, ICT functions and business processes are becoming increasingly intertwined.

In this report, we have restricted our focus to those technology-related goods and services that are internationally traded and which fall into one of the following three sectors—Software, IT Services and Hardware. We do not cover the provision of traditional telephony services to domestic customers given these services are not internationally traded. However, we do include the provision of Software and IT Services that may be delivered via wireline or wireless networks and the provision of networking equipment to the telecommunications sector.

To streamline both our analyses and the communication of our findings, we have consistently segmented the industry into Software, IT Services and Hardware. We recognise that there is significant overlap among these sectors—and among the sub-sectors that sit below them—and that these overlaps are likely to increase over time with the convergence of products and services. But employing these sector definitions (and those of the sub-sectors that underpin them) allows us to reflect meaningful differences in the competitive environment, technology characteristics, mode of delivery, and customer requirements—as well as to identify successful business models and factors for success.

Having defined our scope, we made extensive use of existing industry reports and proprietary McKinsey & Company research. We interviewed scores of individuals who work in this sector—many of whom work closely with leading industry players. We also referred to work done by the

Industry Mapping working group as well as other industry participants, including members of the Framework for the Future Steering Committee.

In our work, we had a number of objectives. The most important of which was to assess the likely evolution of the global ICT industry and the opportunities and challenges that could result. In keeping with this brief, the report that follows, *Australia: Winning in the Global ICT Industry*, is largely devoted to this assessment. But we have also sought to identify the opportunities and challenges that existing and future Australian companies will likely face. The Executive Summary therefore also addresses the ‘most likely’ opportunities for Australian companies and distils the broad policy imperatives that the Framework for the Future working group need to address moving forward. In line with our brief, however, we stop short of specific policy prescriptions as they should reflect the input of all the working groups.

In this report, we identify plausible scenarios for industry evolution and the implications of these scenarios for industry participants. In the context of these scenarios, we outline what we believe it will take to be successful in the industry overall and within specific sectors and sub-sectors. We do not seek to identify the industry ‘end state’ or pick winners. Indeed, it would be impossible to claim this level of insight into the future given the many uncertainties facing this industry both globally and at home.

We hope that this report, as part of the Framework for the Future project, assists the development of a national consensus around the role for Australia in the global ICT industry—and, in particular, the nature and scope of the opportunities and challenges. We hope that it helps to create a clear aspiration, focus and priorities to which political, public-sector and private-sector leadership can commit. And we hope that this commitment will lead to improved allocation of public and private-sector resources, and to enhanced cooperation among industry stakeholders.