

Revisiting the 1965 Centenary of the International Telecommunication Union

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Abstract: The *Journal* republishes an historic paper from 1965 by Richard (Dick) Butler, later to become Secretary General (1983–1989) of the International Telecommunication Union, on the ITU and its influence on telecommunications standardisation in Australia during its first century (1865–1965).

Keywords: History of Australian Telecommunications, International Telecommunication Union, Richard E. (Dick) Butler.

Introduction

The International Telegraph Union, the forerunner of the International Telecommunication Union (ITU), was formed in 1865 in Paris by the representatives of twenty European countries, seeking to make international telegraphy interoperable, with common protocols for users and an agreed set of international tariffs. At this time telegraph services in Australia were run by individual colonies, with limited networks and no international connections. Mail services depended upon ships and horse-drawn coach lines, such as Cobb & Co. The telephone, of course, had yet to be invented. As Dick Butler wrote: “few communities [at that time] were more interested than Australia in the development of the means for speedy and reliable long-distance communication” ([Butler, 1965](#), p. 174)

The ITU’s role is to promote and assist with the efficient utilisation and extension of the world telecommunication networks by encouraging the exchange of information and offering advice to solve telecommunication problems. The ITU is a shining example of international co-operation and the oldest inter-governmental organisation within the United Nations.

The ITU has always been a key international forum for standards setting and regulation. Perhaps its most important roles have been to ensure the technical interoperability of telecommunications services between ITU member (national) states, to allocate different parts

of the global radio spectrum to different services, and to facilitate international co-operation in assigning satellite orbits. It also has a key role in providing expertise to improve telecommunication infrastructure in the developing world. The ITU's membership currently includes 193 countries and around 900 businesses, academic institutions, and international and regional organizations ([ITU, 2023a](#)).

In 1878, South Australia was the first Australian colony to join the ITU, after Darwin was connected to the world via an under-sea cable to Java in 1871. This cable was interconnected to the famous Overland Telegraph Line from Darwin to Adelaide, providing access to and from the other Australian colonies. Upon Federation in 1901, the new Commonwealth of Australia joined the ITU, which became the International Telecommunication Union, embracing telephony as well as telegraphy and other future telecommunication services, from 1932.

The attached historic paper highlights a number of issues particular to Australia that were considered by the ITU in its first century. An overseas call from Australia to the United Kingdom, for example, would need to transit several networks owned by different operators and over several different time zones. The quality of the call was only as good as the weakest link; and here the ITU worked tirelessly to harmonise the standards and equitably share resources to optimise the efficiency of networks.

It is a credit to the ITU that the co-operation and harmonisation in telecommunications achieved over the last one hundred years has been attained by voluntary expert representation from all countries of the world and without resorting to coercion or conflict.

Australia in 1965 was still regarded as a relatively young and developing country, but twenty years later it commanded a pivotal position in the ITU, thanks to the tireless efforts of the author of this paper.

Richard (Dick) Butler served as the Secretary General of the ITU from 1983 to 1989 and was Deputy Secretary General from 1974 to 1982 ([ITU, 2023b](#)). According to his obituary in the *Sydney Morning Herald*:

[H]e was the highest ranking Australian in the United Nations hierarchy and the first and only Australian to be elected as head of a specialised agency in 1982. As the UN's regulator of the global airwaves, based in Geneva, he pushed for the introduction of accessible, reliable and compatible telephone, telegraphy and data transfer services in Third World countries ([Butler & Hoven, 2012](#)).

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The Historic Paper

AUSTRALIAN INTERESTS IN THE INTERNATIONAL TELECOMMUNICATION UNION

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During the past 100 years or so the world has seen some astonishing scientific achievements. But probably none has been more remarkable, nor had so profound an effect upon the affairs of man, than the improvement that has taken place in the means for people to communicate over long distances. The historic "break through", with the introduction of the electric telegraph in the 1830's, has been followed no less dramatically by the development of the telephone, radio, television, the submarine telephone cable and, in more recent times, the use of the space satellite.

One hundred years ago few communities were more interested than Australia in the development of the means for speedy and reliable long-distance communication. The slow exchange of news and information with the old countries was a constant reminder of Australia's immense distance from the cultural sources of its settlers and the markets that sustained them. Even within its own boundaries, communication between the widely separated settlements was hazardous and uncertain.

Thus, the introduction of the electric telegraph into Europe, about the time the first tents appeared on the banks of the Yarra River, was viewed in Australia with understandable interest.

The expansion of the European network within national boundaries was very fast. It was favoured by the social, political and commercial challenge of the times. The first submarine cable was laid between France and England in 1851 and, with the obstacle of the sea breached, slender links began to creep outwards from the old world to the new. During the 1850's and 1860's several plans were put forward with the objective of bringing a submarine cable to the Australian shore. Similar conditions stimulated the installation of international communications.

Eventually, in 1870, the Government of South Australia entered into an agreement with the British/Australian Telegraph Company to lay a cable from Java, already linked with Europe, to Port Darwin. Fig. 1 shows the cable being hauled ashore at Darwin in 1871. Here it joined the historic overland tele-

graph line to Adelaide constructed with infinite labour and resource by Sir Charles Todd and his men along a difficult and inhospitable route explored some ten years earlier by McDouall Stuart. Fig. 2 shows a group of overland telegraph officers at Roper River in 1872. The first "through" message reached Adelaide from London on 22nd October, 1872 and 12,000 miles were bridged in an instant.

With the establishment of telecommunication with the outside world the individual Australian States, led by South Australia in 1878, progressively joined the relatively young International Telegraph Union, which had been founded in 1865.

Now, 100 years later, the Union is widely regarded as an impressive and long-standing example of world-wide

* Mr. Butler is Executive Officer to the Director General. See Page 246.



Fig. 1 — The Landing of the Telegraph Cable at Darwin in 1871.



Fig. 2 — A Group of Overland Telegraph Officers at Roper River in 1872. From left to right: J. A. Little, R. C. Paterson, C. (later Sir Charles) Todd, and J. Mitchell.

international co-operation. It is the oldest of the inter-governmental organisations which form the specialised agencies of the United Nations. Its work is largely of a standard-setting and regulatory nature. It provides the forum for the telecommunication authorities of the world to discuss the removal of inconsistencies in the arrangement and conduct of their services so that the amazing advances that have been achieved in telecommunications will be employed to the full.

The Union's role is to encourage and assist the effective and efficient utilisation and extension of the world networks by providing opportunity for the exchange of information, advice and assistance in the solution of telecommunication problems.

Australia today is no less interested in current telecommunications advances than it was 100 years ago. Certainly the speed, variety and range of our facilities have increased enormously in that time. However these have been paralleled by a vigorous national growth with all of the familiar and complex demands for service which the modern world generates. Telecommunications are now the life blood of a modern society and of virile and successful government, trade, industry and commerce.

Although the physical reality of distance no longer constitutes in itself the problem that it presented to our forebears, other barriers have been exaggerated or imposed which, if left unsolved, would detract no less from the effectiveness of our services.

The first of these is that the other end of any international communication system is owned and operated by another administration or operating agency. Frequently a third or even fourth party is involved at intermediate transit or switching points. The most immediate effect of this situation is that the quality of an overseas call originated by an Australian subscriber is affected by the standards of one or all of the networks through which at some time it passes and over which the Australian administration may exercise no direct control.

In other words the efficiency of any one national network, for international purposes, is no greater than the weakest network in the chain.

The elimination of conflicting operating standards therefore becomes a prime objective of the Union and forms a major part of the activities of the Consultative Committees.

Australia's circumstances, from the telecommunication viewpoint, are such that they require her to take perhaps more than usual interest in the work of the Union.

Our geographical position, comparatively remote from our communities of interest in the northern hemisphere and, to a lesser extent, in the south-east Asian and Pacific regions, has led to a proportionately high investment in submarine cable networks and international telecommunication installations. In addition to the long established Commonwealth telegraph and radio telephone networks, we have in recent years become substantial partners in the submarine telephone cables COMPAC and

SEACOM and in a proposed global communication satellite system.

The development of common standards of equipment, techniques and procedures and the task of persuading the various nations to introduce them into their individual networks therefore are of vital consequence to the effective conduct of our own telecommunication operations and the full economic employment of our capital investments.

Inadequacies in areas of the world networks can even be carried into our national system. The adoption of subscriber trunk dialling, for instance, and the provision of automatic telex in our internal system introduces into the network problems arising from inefficiencies or shortcomings in foreign cables or networks.

A further factor affecting Australia more than most major telecommunication Administrations, and also arising from our geographical position, is the problem of differing world time regions. For example, there is no overlap of business hours between Europe and Australia. When we are at work London is sleeping. Most of Sunday in America is Monday in Australia. This in turn affects traffic volume on a particular route at a particular time. It imposes problems for Australian operators not shared to the same degree by northern hemisphere operators. In a modern world requiring large scale capacity circuits and imposing ever increasing demands for new facilities, the time differential must also be recognised in planning facilities to achieve maximum utilization of plant.

The word "persuasion" has been used in this Article when referring to the decisions of the Union. This has been deliberate in order to emphasise that the Union has no powers of compulsion. It can only *recommend* that a course of action is followed by members.

The extent to which members will put this advice into effect is of course subject to a number of factors, mainly financial, i.e. the substitution of equipment, etc. However acceptance of the principles expressed in the Recommendations is strongly assisted by the fact that the people to whom they are directed have themselves contributed to their formulation.

The opportunity that the Union provides for joint and voluntary consultation in the widest sense is the corner stone in its continued success. At the same time this continued consultation presents a strong reason why Australian participation in I.T.U. activities should not diminish in the future.

Australian conditions have provided us with unusual opportunity to subscribe to the technical studies of the Union. The magnitude of the areas covered by our domestic networks has produced telecommunication problems in our national services that are repeated within the boundaries of very few countries. For example, circuits equivalent in length to those between Cairns and Perth would

stretch from London to Karachi. The experience gained in the solution of these problems has earned for Australia considerable recognition as a long distance telecommunication authority.

However it should not be forgotten that, despite our experience in the telecommunication field, Australia must still be regarded as a young and developing country. The expansion of our networks, involving continued substantial investment and technical commitment, is therefore inevitable. The advantages of avoiding decisions, in respect of world standards, which could be prejudicial to the continued compatibility of our telecommunication networks with the world systems are obvious. This can best be achieved by maintaining the closest possible association with the forums at which these decisions are reached.

Just as most organisations have need to review their responsibilities and management, to analyse requirements and to re-organise their methods and structure where necessary, it is also desirable that the members' collective responsibilities

as a Union should be regularly examined and appraised to ensure that they still are being properly discharged. This need is accentuated in an era of rapid changes.

The most appropriate forum for such a review is the supreme body of the Union, i.e. the Conference of Plenipotentiaries, which is presently convened at Montreux. The Conference has the opportunity to decide the fundamental aspects of the Union's working methods, Headquarters Secretariat requirements and general policies, and to provide further avenues for international co-operation, improved telecommunication understandings and services generally to the benefit of the various communities.

Australia is equally interested in contributing to the improved effectiveness of the Union and like many other countries has submitted proposals for Conference consideration.

There are few of man's activities with a history of peaceful international co-operation as impressive as that pertain-

ing to telecommunications. But it is only fair to say that the remarkable progress that has been made in this field would not have been possible without the realistic attitude with which telecommunication authorities have approached the development of their own national networks, those in other countries and the international cables and facilities which lace them into a world wide network.

The growing needs of the modern world demand more comprehensive, more rapid, more efficient means to communicate. The Union is making its contribution by encouraging the study of mutual problems in joint consultation, the sharing of telecommunication knowledge and the fruits of research, and by arranging the provision of materials, equipment and assistance, where needed, for the improvement of the world telecommunication network.

Australia, along with the other Members of the Union, has much to gain by continuing to play a full and vigorous role in these activities.



R. E. BUTLER

R. E. BUTLER, author of the article "Australian Interests in the International Telecommunication Union", joined the Department as a Junior Mechanic. After various appointments as Clerk and Senior Industrial Officer he became, in 1960, Executive Officer to the Director-General with particular responsibilities for Legislative, Ministerial,

Parliamentary and International Relations, including major external communication partnership matters. Mr. Butler qualified at the Royal Melbourne Technical College with an Associate Diploma of Public Administration, and is a qualified Accountant (Australian Society of Accountants). He has attended various sessions of the Administrative Council of the International Telecommunication Union and was a member of delegations which negotiated agreements for a global satellite communication system in partnership with the U.S.A. and other countries. He is a member of the Australian Delegation to the 1965 Centenary Plenipotentiary Conference of the I.T.U.