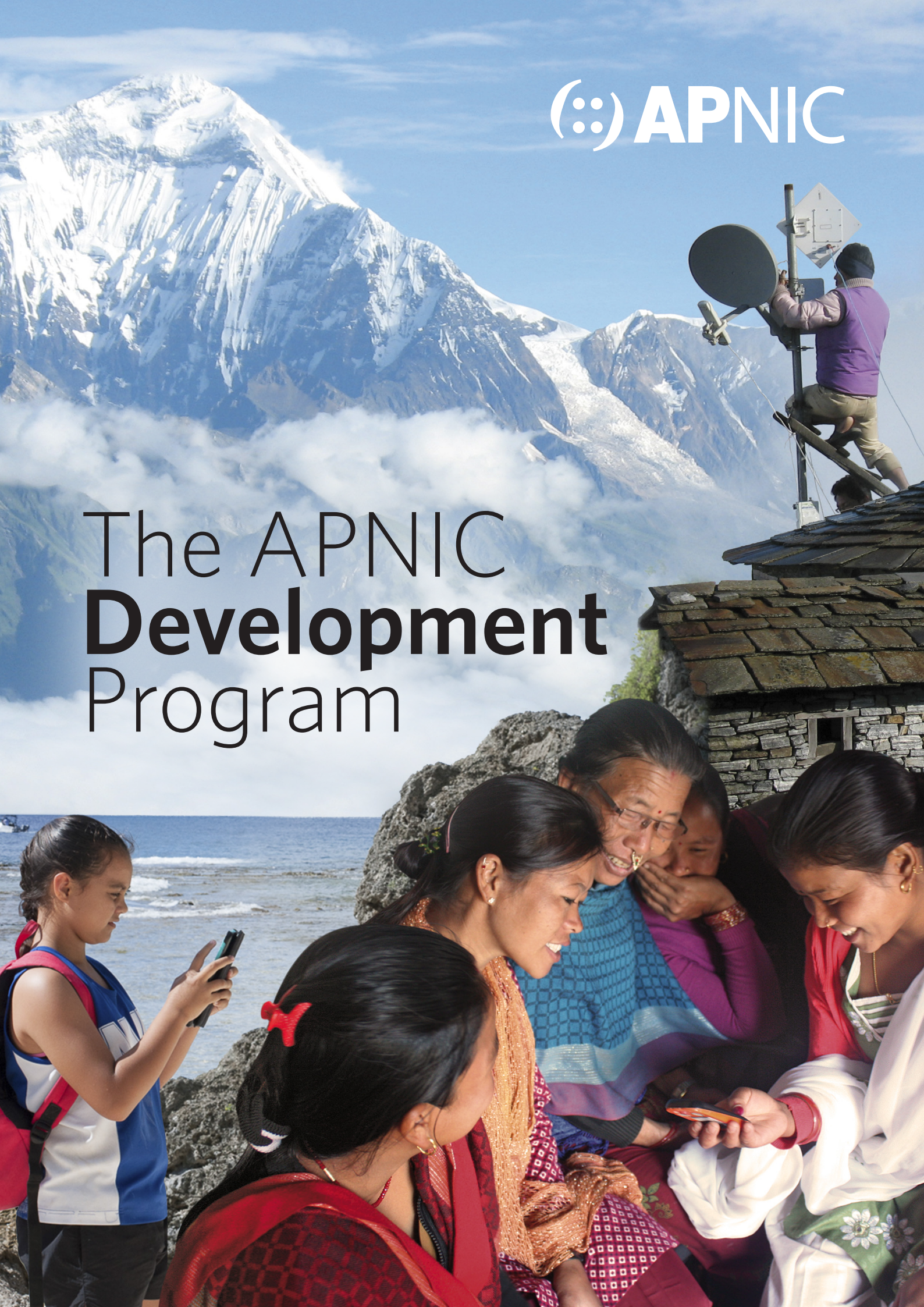





The APNIC **Development** Program





A global, open, stable,
and secure Internet
that serves the entire
Asia Pacific community

The Internet in the Asia Pacific

For millions of people across the Asia Pacific the Internet is an essential fact of life. From all walks of life, they depend on it for their livelihoods, health, education and much more. For many, it has always been there and is always available.

But there are millions of others who are still unconnected; and millions more who have only limited or restricted access to the Internet. If they are to be better educated, healthy, and more productive citizens of the Asia Pacific, it is essential they get connected.

To get people, business, and organizations connected – and ensure they stay connected – takes robust and resilient modern networks, properly managed by trained and experienced technicians. Just as we all need well-trained doctors to help keep us fit and healthy, the Internet needs well-trained technicians and engineers to help keep it fast, reliable, secure and inexpensive.

But the Internet is growing fast – too fast for any static curriculum to keep up. What we need – as well as good tertiary training – is current and relevant experiential learning, through interactive workshops, tutorials, fellowships and technical assistance.

A truly healthy Internet requires a vibrant, hands-on approach to training for all those involved in building and maintaining it.

The Challenges

Many reports predict the Internet boom in the Asia Pacific will continue with strong growth in traffic, devices and users. By 2019, the region will have the most Internet traffic from mobile devices in the world.¹ Another report² on Pacific Island nations says recent submarine cable installations have resulted in an explosion of capacity. Across the Pacific, international Internet bandwidth jumped more than 1,500% between 2007 and 2014, rising from fewer than 100 Mbit/s to over 1 Gbit/s.

But those who travel the region know the availability, stability, speed, and security of Internet services vary widely from place to place. Users in some developing economies tolerate conditions that are unacceptable in the developed world, and which will seriously limit the benefits that the Internet can deliver.

The Human Challenge

The single biggest factor affecting the Internet's success is the capacity of service providers to properly build and manage their networks. For a secure, reliable and efficient Internet infrastructure, the businesses, managers and engineers responsible must all have the skills to properly do their jobs. While providing reliable services which are available "24x7", businesses must plan and manage rapid growth, deal with growing security challenges, and adapt to new technologies such as IPv6 – while often operating in a competitive environment.

A report³ from technology analysts, IDC, warns of a shortage of such technical skills saying: "The Asia Pacific trends show an increasing need for people

with network skills in emerging technologies and for well-trained teams that focus on higher value-added activities".

The IDC report estimated that at the end of 2012 there was a shortage of just over 250,000 professionals with networking skills in the region (excluding Greater China and Japan). It predicts this shortage will grow to more than 450,000 networking professionals by the end of 2016 and from there, continue to worsen.

The Technical Challenge

Meanwhile, the region is facing a growing list of technical challenges including:

- 1) The transition to IPv6: With IPv4 resources all but exhausted globally, IPv6 is the only viable option for the Internet's future growth in the Asia Pacific region.
- 2) Improved security: From DDoS attacks to hacking, malware and how to safely manage information in the cloud; security remains the top priority of network engineers and administrators around the region.
- 3) Stability and scalability: Having reached the "first billion" users in the booming cities of the Asia Pacific, networks are now reaching across the digital divide to the region's remotest communities on a large scale.
- 4) Efficiency and cost: Wherever they are, networks must always be efficient; whether they are connecting small, remote communities at the lowest possible cost or delivering services cheaply and efficiently to millions of users in the largest cities.
- 5) Localization: Networks need to localize. Internet Exchange Points (IXPs) allow local content to stay local, lowering network costs, and increasing speed and efficiency.
- 6) Regulation: The Internet's success is based on a unique model of consensus-driven and accessible processes. It is an inclusive, multi-stakeholder community using standards that are freely available to build on. It's important that regulation does not unexpectedly restrict or damage this model.
- 7) Research: With the Internet's rapid growth and improving technologies, we need research that will help us understand where the problems are; where they will be in the future; and what we need to do to fix them.

¹ "Global Internet Report 2015: Mobile Evolution and Development of the Internet" ISOC July 2015

² "Economic and Social Impact of ICT in the Pacific" Pacific Region Infrastructure Facility 2015

³ "The Evolution of the Networking Skills Gap in the Asia/Pacific". William Lee PhD. June, 2013

The Community Response

Across the Asia Pacific, Internet engineers are doing their best to build and manage networks that are robust, resilient, and efficient. In some cases, professional networks and community organizations are being formed as important mechanisms for knowledge sharing and professional development. These include so-called Network Operator Groups (NOGs) for technical and operational development; Computer Security Incident Response Teams (CSIRTs or CERTs) for security issues; and associations of Internet Service Providers (ISPsAs) for organizational coordination.

These community groups play a vital role in the development and maintenance of the networks that make up the Internet. They also make ideal development partners, for the delivery of training and capacity building directly into local communities.



The APNIC Response

As the Internet registry for the Asia Pacific, APNIC is responsible for the management and distribution of critical Internet resources that are essential to the stable and reliable operation of the Internet.

A non-government, not-for-profit, membership-based organization, it is one of five Regional Internet Registries (RIRs) worldwide handling the fair distribution and responsible management of Internet Protocol (IP) and Autonomous System (AS) numbers and related services globally.

APNIC serves 56 economies in the Asia Pacific region that together account for more than half of the world's population, and where the vast majority of global Internet development activity will occur in the years ahead. We support over 10,000 ISPs and other network operators, who together are building and maintaining the region's Internet infrastructure.

As part of its mission, APNIC is actively involved in the development of the Asia Pacific Internet community. It provides training and technical assistance, and invests in activities that support community and human capacity development. APNIC also supports and facilitates the deployment of important infrastructure such as IXPs, root servers, and devices used to monitor and measure the Internet itself.





Training

The aim of APNIC's technical training is to improve the knowledge and expertise of Internet network operators, engineers, managers, educators, and regulators, ensuring they adopt and use best current practices. This helps them make full and efficient use of their Internet resources and effectively apply new technologies and techniques.

APNIC also provides training in broader Internet policy and governance matters and advocates the importance of technical expertise in discussions about managing the global Internet.

Technical Assistance

APNIC's Technical Assistance supports the region's Internet community in the deployment and maintenance of scalable and resilient networks using internationally-recognized, best current practices.

APNIC works with recognized Internet specialists to provide customized technical mentoring on core APNIC competencies and services; improve the technical understanding of Internet technologies in practical ways; and provide technical support for the deployment of root servers and IXPs.

Fellowships

Every year, APNIC provides fellowships to members of the Asia Pacific Internet community to allow them to attend technical training and conferences where they can engage and learn from recognized international experts. The APNIC fellowship program places special emphasis on supporting diversity in the community, ensuring the participation of women, young people and those from less developed economies.

Community Development

APNIC supports the continuing development of the Asia Pacific's thriving community of NOGs because they play a crucial role in the operation of the Internet.

In addition to its NOG support, APNIC also organizes its own annual conference and partners with other regional bodies to organize the Asia Pacific Regional Internet Conference on Operational Technologies (APRICOT). APNIC also sponsors and supports a wide range of other Asia Pacific events and organizations.

Grants and Awards

APNIC manages a successful grants and awards program called the Information Society Innovation Fund (ISIF Asia) that supports national and regional projects that use the Internet to achieve social and economic development in the region.

An established and respected program that has supported numerous important initiatives, ISIF Asia has invested in Internet infrastructure and services that are affordable and efficient, innovative Internet applications that are successful and sustainable models for the provision of Internet services.

Research

APNIC is committed to world-class, research and development initiatives looking at routing, security, DNS, IPv6, policy and IP addressing issues. This research is designed to inform APNIC's operational and policy activities and to assist community members to better understand the operation of the global Internet.

It also helps the APNIC community to better understand and identify technical problems and suggest possible solutions and strategies.

APNIC – A Respected and Recognized Partner

With more than 5,000 Members in almost every nation of the Asia Pacific, APNIC has spent 20 years helping to build a world-class community of Internet service providers to serve the region's 3 billion citizens. Many of its 70-plus staff travel regularly to events and activities around the region to support the needs of Members, provide training and technical assistance, or give presentations at conferences. APNIC also partners with many local, national and regional organizations through MoUs, sponsorships and informally to support the continuing development of the Internet.

APNIC's success in partnering and seeking financial support for its activities is founded on five important assets:

- 1) A strong technical focus and regional recognition as a source of best practice and expertise
- 2) Neutrality and independence from any particular vendors, services, or technologies
- 3) Financial strength and transparency
- 4) Robust regional networks and relationships
- 5) Long track record of successful management and implementation





Get in touch!

APNIC welcomes support for its Development Program, especially for its work in less developed economies. If you are interested in learning more about APNIC's activities or would like to provide support, please contact:

Duncan Macintosh
Development Director
duncan@apnic.net

Paul Wilson
Director General
pwilson@apnic.net

www.apnic.net

