New Zealand IPv6 Task Force
State of the Nation

October 2011

The Purpose of the Task Force

"The New Zealand IPv6 Task Force is tasked with promoting the adoption of IPv6, assisting with training and education options and implementation planning. The Task Force is aligned with the Global IPv6 Forum, and its work is driven by the impending exhaustion of IPv4 addressing and the associated risk and additional cost that this is expected to impose on New Zealand organisations."
http://www.ipv6.org.nz/about/

The IPv6 Task Force is an Industry Group Working to Promote the Adoption of IPv6 in NZ

Charitable Trust:
Murray Milner, Dean Pemberton,
Vikram Kumar

Convenors:
Murray Milner
Dean Pemberton (technical)

Secretariat:
InternetNZ

Funders
InternetNZ
FX Networks
Microsoft
InspireNet
Prophecy Networks

Members

Alcatel Lucent
Allied Telesis
Auldhouse
Braintrust
Canterbury Development
Corporation
Catalyst
Cisco Systems
Department of Internal
Affairs
FX Networks
Gen-i
Huawei
IBM
InternetNZ
InspireNet
Juniper Networks
Kordia
Microsoft
Ministry of Economic

Development
NZi3
NZICT
NZDF (New Zealand
Defence Force)
NZRS (New Zealand
Registry Services)
Orcon
Prophecy Networks
REANNZ
Tech Mahindra
Telecom New Zealand
Telecommunications
Carriers Forum
TVNZ
TelstraClear
TUANZ
Voco
Vodafone New Zealand
WorldxChange

Overview of APNIC Leading Countries

AUSTRALIA
BANGLADESH
CHINA
HONG KONG
INDIA
INDONESIA
JAPAN
SOUTH KOREA
MALAYSIA
PAKISTAN
PHILIPPINES
SINGAPORE
TAIWAN
THAILAND
VIETNAM

Of the 58 member nations, the most prominent 18 based on size of economy and technology infrastructure development are shown.

Countries where the Government has stimulated generation of IPv6 adoption timelines for Government and industry or mandated them.

NEW ZEALAND
CAMBODIA
GUAM

Countries where there are NO Government mandated timelines

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Requires a Different Approach!

IP v6

The New Zealand Task Force Approach

Our principles are:
We remain aware of what is happening globally and locally
We share our information and help others find the information they need
We are supportive of progress across all stakeholders, large and small
We refrain from vilifying real or perceived lack of progress

What we do:
We conduct surveys to gain insight into trends
Encourage early adopters
Provide support through our technical special interest group
Industry sector liaison
Government sector liaison
Facilitate training capability
Facilitate evolution of IPv6 products and services
Leverage our web & social media presence
Work with pathfinders to discover learnings that can be shared
Stay connected to progress and news from around the world
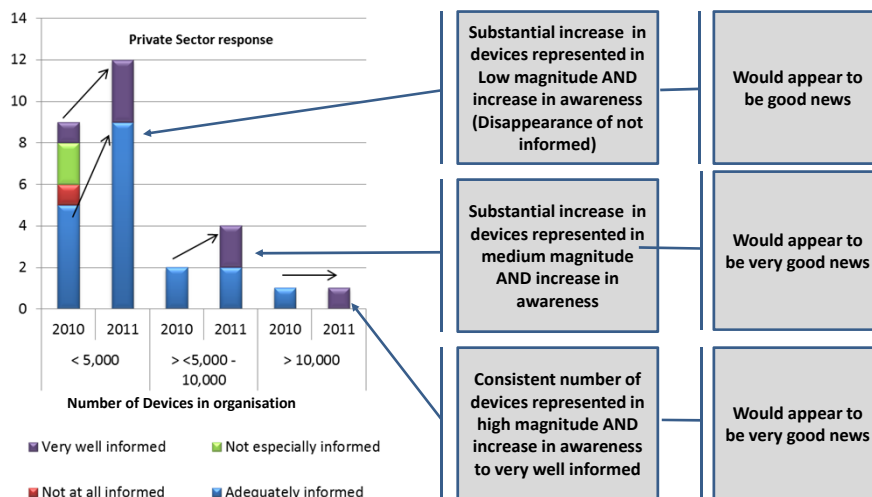Media and publicity

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New Zealand:
Current Situation

– based on surveys, engagement with Government, enterprise, industry groups and participation in local and international events
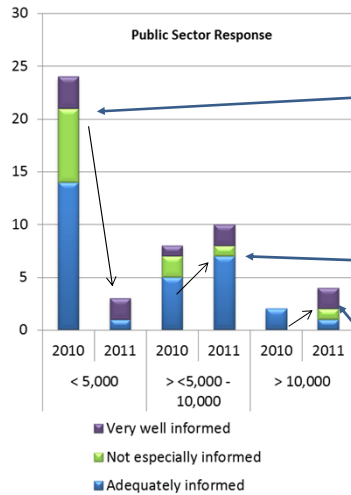

Top 100: Private Sector Responses

Substantial increase in devices represented in Low magnitude AND increase in awareness (Disappearance of not informed)

Would appear to be good news

Substantial increase in devices represented in medium magnitude AND increase in awareness

Would appear to be very good news

Consistent number of devices represented in high magnitude AND increase in awareness to very well informed

Would appear to be very good news

Substantial increase in the devices represented and improved awareness levels

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Top 100: Public Sector Responses

Decrease in devices represented in <u>low magnitude</u> range – Stable awareness Disappearance of – "not especially informed

Possible further investigation required

Increase in devices represented in medium magnitude range AND increase in awareness
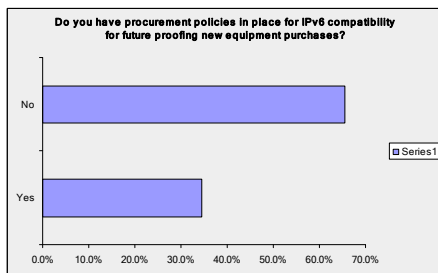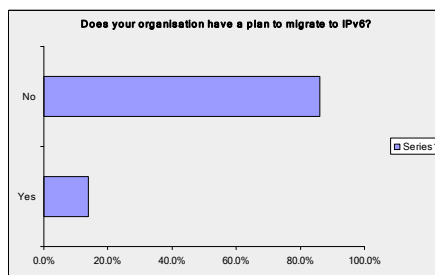
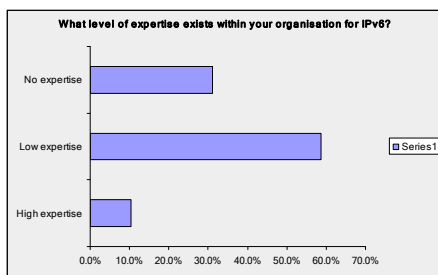Would appear to be good news

Nearly double the number of devices represented <u>in high magnitude range</u> AND increase in awareness

Would appear to be good news (although some respondents not especially well informed)

Similar number of devices represented, but in larger organisations - with increased awareness levels

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Local Government Survey: No. 1, August 2011

- Local Government engagement is currently low
  - There are some notable exceptions
- IPv6 expertise is low
  - Training being established
- Adoption planning is low
 - Procurement policies better

Demand Surveys – Summary

- **IPv6 awareness is sufficient**
  - Diminishing return on investment
- **Government sector adoption response seems slow**
  - Not a great engagement to date, but we anticipate that there is work going on behind the scenes
  - Central Government might be ahead of Local Government
- **ISP/Carrier sector mobilising**
  - But are key players moving fast enough to drive adoption?
- **Consumer/WAN CPE seems to be a constraint**
  - How are some ISP's and carriers dealing with this today?
- **Increasing industry support for IPv6 Task Force initiatives**
  - Increasing membership
- **Commercial training capability maturing**
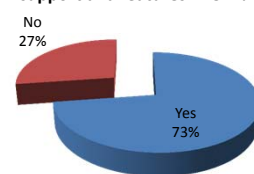 - Ad-hoc low cost courses available
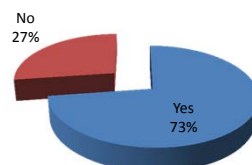
Supply Side ISP / Carrier – Survey Results

Has your organisation been allocated an IPv6 address range?

No 14%

Yes 86%
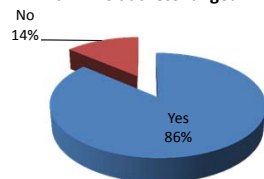
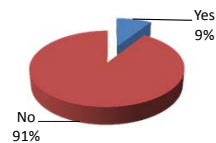**Has your organisation evaluated IPv6 support and features in CPE?**

No 27%

Yes 73%

Does your organisation have an IPv6 test environment?
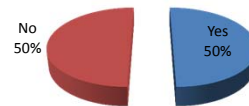
No 27%

Yes 73%

Supply Side: ISP / Carrier – Survey Results

**Does your organisation provide resources such as FAQs, knowledge base articles and similar for residential customers needing advice on IPv6?**

Yes
9%

No
91%

Does your organisation have the capability to provide business customers with IPv6 planning information?

No
50%

Yes
50%

Does your organisation currently provide IPv6-enabled products and services?

Yes
41%

No
59%

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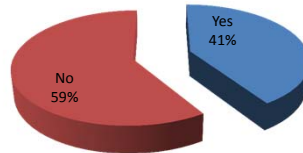
Supply Side: ISP/Carrier Survey

- Work is going on behind the scenes, but there is a reluctance to go public
- 41% of organisations currently provide IPv6-enabled products and services
  - 25% will provide IPv6-enabled products and services within the next 12 months; 66% by mid 2012
- 73% have a test environment now. Remainder likely to follow within 6 months
- 73% have or are evaluating CPE
  - Consumer CPE suppliers appear to be behind Enterprise suppliers, but some respondents claim WAN CPE is not readily available as yet
- 91% of respondents do not provide FAQ's or support for residential customers

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Current State: Awareness

Category	Assessment	Evidence/comments
Central Government	Adequate	Statistics from Task Force CIO survey.
Local Government	Adequate	Statistics from Task Force CIO survey. Engagement with ALGIM & pathfinder.
Corporate	Adequate	Statistics from Task Force CIO survey
SME's	Med-Low	ISP/Carrier survey indicate indicates low level of awareness
Consumers	Low – but low impact	Main stream TV featured IPv6 related news on 4 occasions (World IPv6 Day, APNIC address expiry) Consumers reliant on ISP/Service providers for information.
Vendors - Networking	Adequate	
Vendors - CPE	Adequate	
System Integrators	Adequate	
ISP's / Carriers	Adequate	On-going survey & benchmarking proposed

Adoption (Demand side) – Strategy, Planning & Procurement

Category	Assessment	Evidence/comments
Central Government	Limited visibility	Anecdotally, progress being made however a diminished number of respondents in 2011 CIO survey . Task Force proactively engaging Q4 2011
Local Government	Poor progress	Tauranga City Council leading ALGIM* involvement - scaling up.
Corporate	Adequate	Significant evidence in Top 100 CIO survey that organisations are planning for and ramping up web site transitions – Encouraging SIs
SME's	Med-Low	Low visibility of this group.
Consumers	None	Early adopters are experimenting

*ALGIM - Association of Local Government Information Management

Adoption Capability (Supply side) – Strategy, Planning & Procurement

| Category	Assessment	Evidence/comments
ISP's / Carriers	Adequate	OSS/BSS may be lagging
Vendors - Networking	Adequate	Some products appear to be lagging (E.g. firewalls and network performance tools)
Vendors - CPE	Lagging	ISP/Carrier survey indicate this group may be lagging – Task Force is engaging vendors and consumer advocacy groups to progress issue.
System Integrators	Adequate	Internal training and skills development may be lagging. Proposal being considered as to how the Task Force can gain more insight into progress.

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New Zealand: The Good News

– some good outcomes appearing in the New Zealand market

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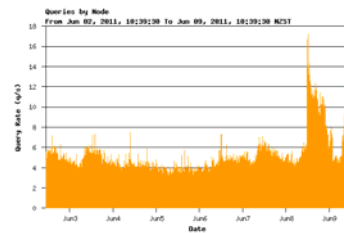
World IPv6 Day – New Zealand Statistics

www.ipv6.org
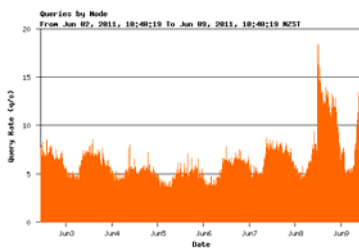
Mainstream Media
Task Force Media release.
Interview on NZ Tech Podcast
Significant announcements by Gen I and
Telstra Clear.

Social Media
Considerable Twitter activity on the days
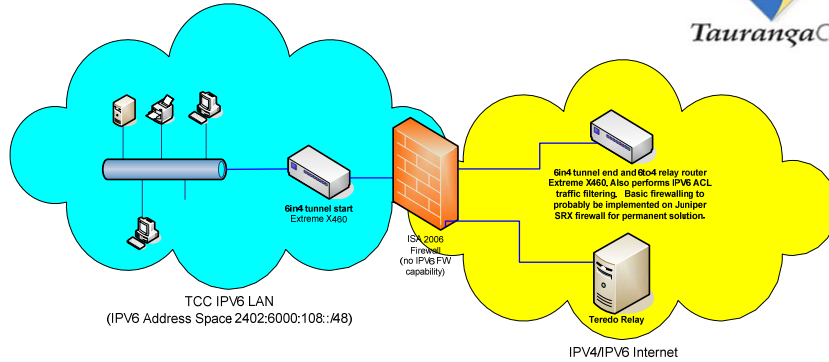leading up to – and on World IPv6 Day

Queries on nz name server 2

Queries on nz name server 1

Adoption Examples: Web Sites

Tauranga City Council: Adoption Leader

The 6to4 site-specific relay handles delivery of 2002::/16 traffic back to IPV6 users on the internet.

The Teredo relay (also site specific) handles delivery of 2001:0::/32 traffic back to IPV6 users on the internet.

These two services have been implemented to ensure good IPV6 communication where transition technologies (as opposed to native IPV6) are in use at the client end.

Government Sector Current Status & Projected Adoption Path
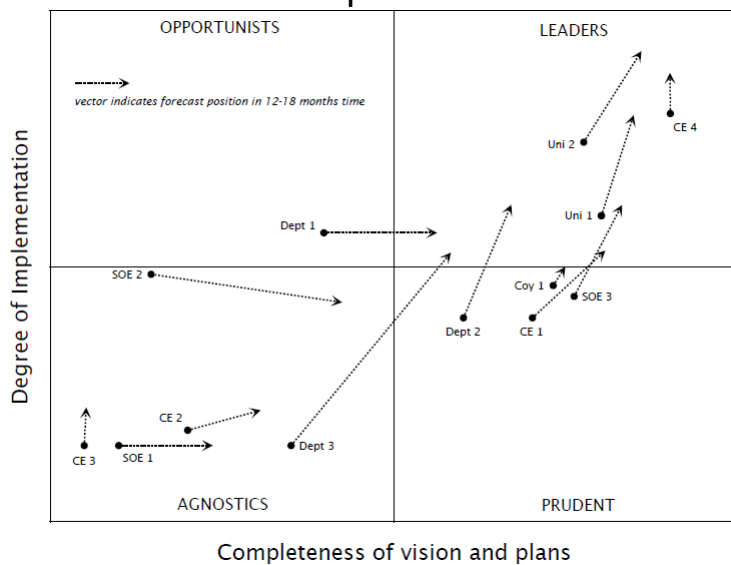
ISP/Carriers with IPv6 Offerings

IPv6 Service Offerings in NZ

Consumer CPE Update

IPv6 compliant IP Router product has made it's way on to retailer shelves. Prices are the same or similar to IPv4 product.

Wireless router – Wellington retail outlet Sept. 2011

Manufacturers advise that:
- IPv6 compliant DSL Modem routers are currently undergoing IPv6 logo certification process and have already been shipped to ISP's for testing.

Some Key Insights for Adoption

1. Keep reminding your organisation about IPv6
   - Without a **dedicated champion** we know you will find this be very difficult.
2. Remember to include IPv6 in the 5 P's
   - Policies
   - Procedure's
   - Procurement
   - Planning
   - Projects
3. Think big but START SMALL
   - External facing web sites are the best place to start
   - Do not overwhelm your investment manager with the need for a BIG $ investment, you may never get started

New Zealand: The Future

– scenarios and our action plan

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NZ Adoption Scenario – Forecasting the Future

Forecasts

Fulfil, Assure and Billing systems constraints ?

- Network Infrastructure installed base (1)
- CIO IPv4 expiry awareness (2)
- Web sites (public), Email DNS - actual and planned (3)
- CIO's with no plans for Websites, Email, DNS (4)
- Carriers /ISPs offering Services (5)
- IPv6 Traffic (6)
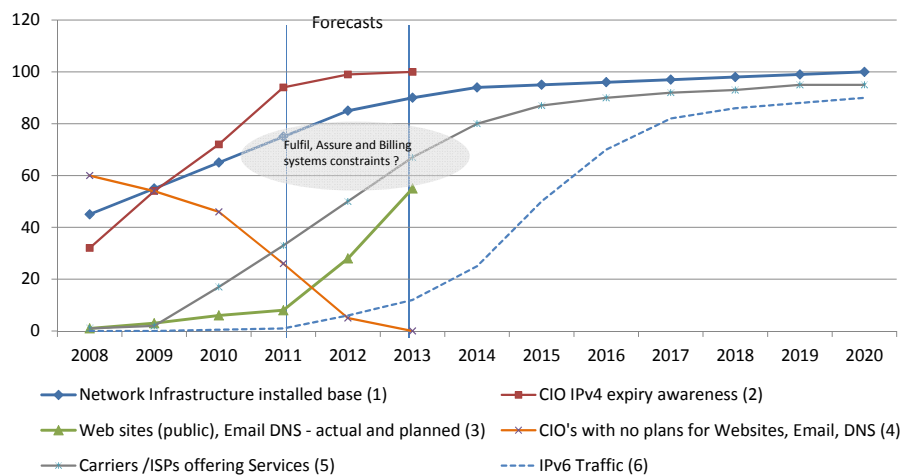
1. Estimate (approx. 10% refresh per annum,)	4. Top 100 CIO Survey
2. Top 100 CIO survey	5. New Zealand statistics dept.(2011 & 12 to be confirmed)
3. Top 100 CIO Survey	6. International traffic growth forecast

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Proposal to Benchmark Adoption Progress in NZ

Research & assess the options → Formulate the framework → Engage with stakeholders & socialise the concept → Roll it out – Outreach

Scope
ISP/Carriers
CPE vendors
System Integrators
Public service providers

Iterate and align as necessary

Principles
- Use public data
- Validated & aligned internationally
- Abstracted, simple, affordable.

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Actions by Work Stream

Surveys | Case study library | White papers - ALGIM
Collateral

News / Social media | After 5's | Hui – Event(s)
Outreach

Local Govt - TCC | System Integrator partnership? | Central Govt
Pathfinder / Case studies / Proactive

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A Few Issues Still To Consider

1. Can we rely on market forces alone?
2. To what extent should we be encouraging Government adoption?
   - E.g. Procurement guidelines, Citizen overseas access, etc
3. Can we get buy-in to a Government backed timeline?
4. Can we get buy-in to an industry backed timeline?
5. Can we assist with industry standards for CPE (to support consumer deployment)?
6. Impact of Government spectrum clearance & timing of LTE , 4G deployment on IPv6 adoption in NZ?
   - Timing and impact of "Internet of Things" growth (M2M, mobile device diversity, etc)
7. What is the impact on service availability if carrier OSS may not be capable inside a year?

Conclusions

- There are no Government-led mandates for adoption in the New Zealand market
- Surveys tell us:
  - Awareness across all sectors is strong
  - Procurement practices are improving
- Adoption is variable
  - Central Government will make good progress during 2012
  - Local Government needs some focus (ALGIM)
  - ISPs/Carriers likely to be ready during 2012
  - Enterprises highly variable needing support from system integrators
- IPv6 Task Force is moving towards structured benchmarking of progress towards adoption

Thanks for Your Attention

Questions?