

HSSG Objectives: The End Users' View

Presented by

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It's time to focus on objectives

- **Several End Users met to measure consensus on possible objectives for the study group**
 - **Started at a dinner meeting and seemed like a good idea**
- **Conducted a number of straw polls to get a sense of where we are**
 - **Done outside other ad-hoc meetings so there may be some overlap**
- **It will be interesting to see whether or not end users' view aligns with others in the study group**

Straw Polls

#1

The HSSG should adopt as an objective:

A – One MAC Data Rate >10Gbps

B – Scalable MAC Data Rates >10Gbps

C – No opinion at this time

Results:

A – 9 (consensus – 82%)

B – 0

C – 2

Straw Polls

#2

The HSSG should adopt as an objective:

Support 100 Gb/s as the MAC Data Rate

Results:

Yes – 8 (72%)

No – 0

Abstain – 3

Straw Polls

#2A

The HSSG should adopt as an objective:

**Support *a minimum* of 100 Gb/s as the MAC
Data Rate**

Results:

Yes – 8 (73%)

No – 0

Abstain (No Opinion) – 3

Straw Polls

#2B

The HSSG should adopt as an objective:

**Support *a minimum* of 80 Gb/s as the MAC
Data Rate**

Results:

Yes – 4

No – 6 (55%)

Abstain (No Opinion) – 1

Straw Polls

#3

What should be the primary and secondary reach objectives for HSSG (Vote 1 time for each):

	Primary	Secondary	Consensus	%
A. 0 – 15 m Cu	0	0	No	0
B. 0 – 150 / 300 m MMF	1	1	No	18
C. 0 – 150 / 300 m SMF	1	2	No	27
D. 0 – 2 / 10 km SMF	8	3	Yes	100
E. 10 – 40 km SMF	1	4	No	45
F. > 40km SMF	0	1	No	9

Straw Polls

#4

Ideally, I would prefer to use the same solution for 150 / 300m that I use for 2 / 10km

Results

Yes – 8 (73%)

No - 3

No Preference – 0

Straw Polls

#4A

If the cost of the 2/ 10km solution is less than or equal to 2x the 150 / 300m solution, I would use it for the 150 / 300m application.

Results

Yes – 7 (64%)

No - 3

No Preference – 1

Straw Polls

#6

If the MAC data rate is 100G, a single-interface solution based on a 10-lane by 10G lambda approach on 1 pair of fibers would be acceptable:

Results

Yes - 10 (consensus - 91%)

No - 1

Straw Polls

#7

If the MAC data rate is 100G, a single-interface solution based on a 10-lane by 10G lambda approach on multiple pairs of fibers would be acceptable:

Results

Yes - 3*

No - 8 (73%)

**** One response “yes in data center, no everywhere else”***

Straw Polls

#7A

If the MAC data rate is 100G, a multi-interface solution based on a 10-lane by 10G lambda approach on multiple pairs of fibers would be acceptable :

Results

Yes - 2

No - 9 (consensus - 82%)

Straw Polls

#8

If the MAC data rate is 100G, a single-interface solution **(assuming reach / cost goals met)** based on an “n”-lane by >10G lambda approach on 1 pair of fibers would be acceptable :

Results

Yes - 10 (consensus - 91%)

No - 1

Straw Polls

#9

If the MAC data rate is 100G, a single-interface solution based on an “n”-lane by >10G lambda approach on multiple pairs of fibers would be acceptable :

Results

Yes - 2*

No - 9 (*consensus - 82%*)

**** One response “yes in data center, no everywhere else”***

Straw Polls

#10

The following is important to me:

Support PHY resiliency such that an n-lane PHY will continue to operate in a de-rated mode, n-x, where x represents the number of failed lanes

Results

Yes - 2

No - 9 (consensus - 82%)

Straw Polls

#11

**The HSSG should adopt as an objective:
Support 802.3ad Link Aggregation**

Results:

Yes – 7 (consensus - 100%)

No –

Straw Polls

#12

**The HSSG should adopt as an objective:
Support star-wired networks using point-
to-point links and structured cabling
topologies.**

Results:

Yes – 6 (consensus - 100%)

No –

Straw Polls

#13a Assuming no PMD with a reach > 10Km and assuming a 10lane by 10G Lambda approach, I would want to be able to extend the reach by operating over a WDM system.

Results:

Yes – 4 (consensus - 75%)

No – 1

No Opinion - 0

Straw Polls

#13b Assuming no PMD with a reach > 40Km and assuming a 10lane by 10G Lambda approach, I would want to be able to extend the reach by operating over a WDM system.

Results:

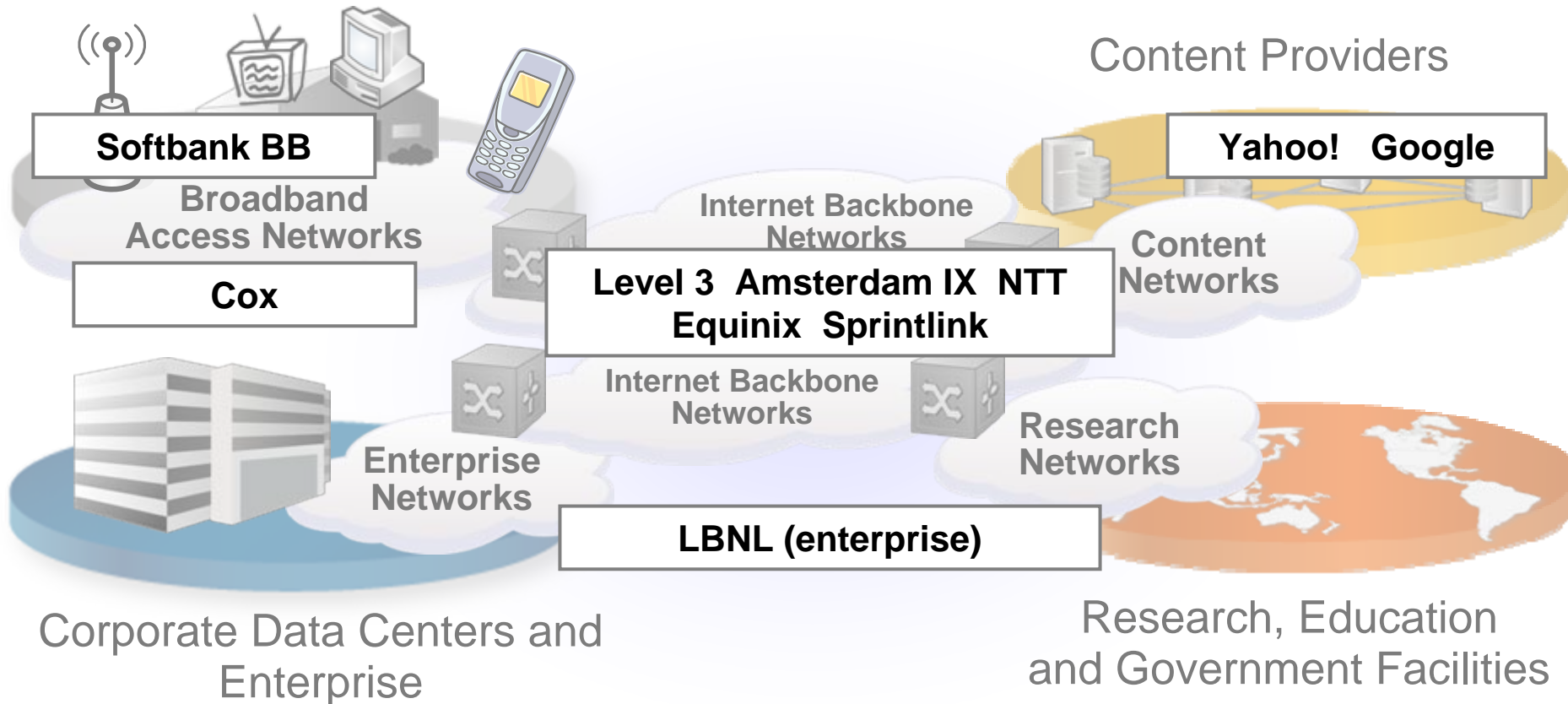
Yes – 3

No – 2

No Opinion - 0

Breakdown of users by market

Consumer Broadband Access



Discussion on Performance / Cost ratio

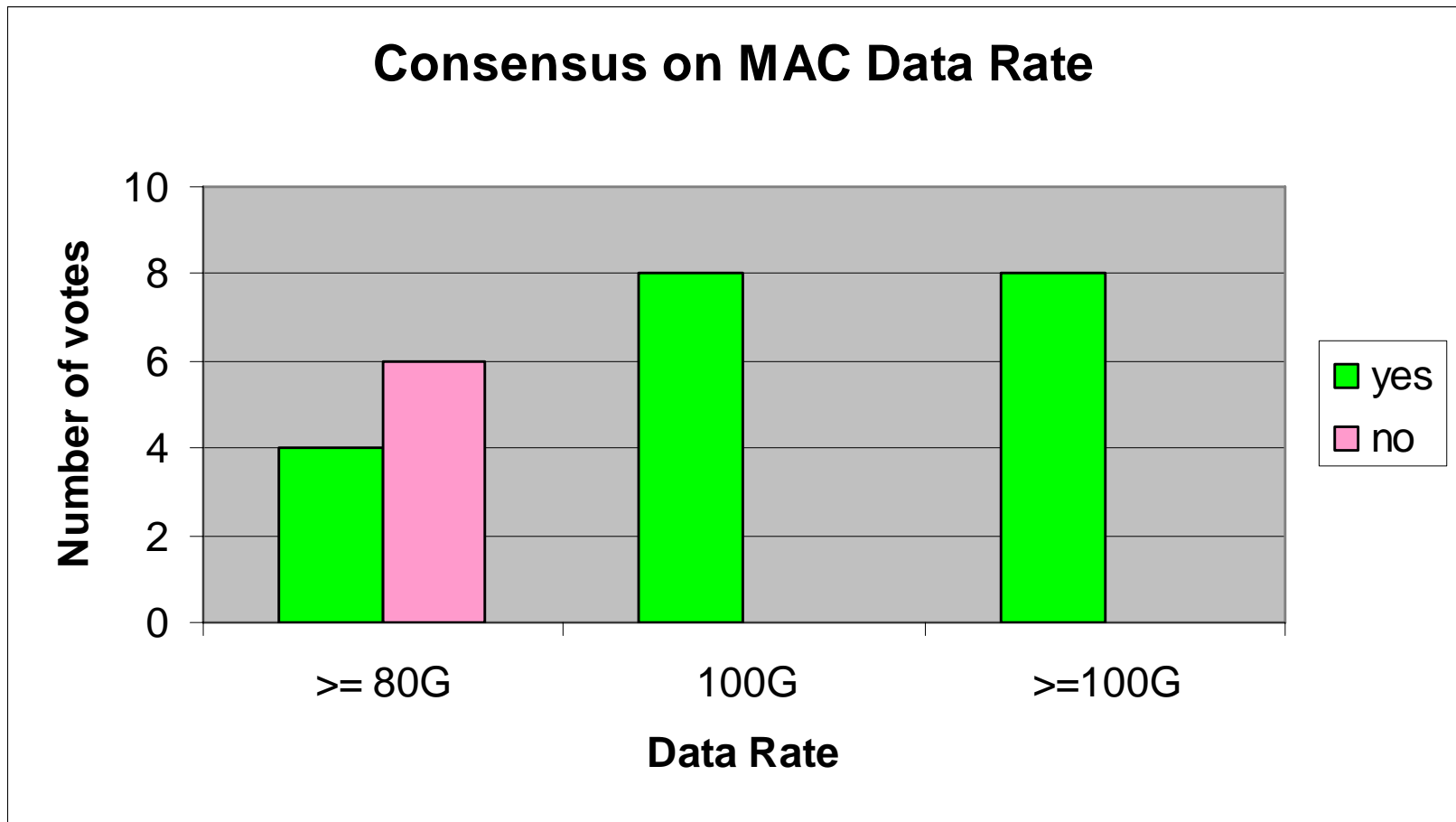
- **We need a definition of the cost we're talking about**
 - *End users think about cost holistically*
 - Per port cost + transceiver cost
- **We need to understand the time frame of the comparison**
- **End users understand (all too well) that there is a higher cost associated with early adoption**

Consensus

- **It appears we are at or near consensus in the following areas:**
 - **An objective to support One MAC Data Rate >10Gbps**
 - **An objective to support 100 Gb/s as the MAC Data Rate**
 - **An objective to support at least 100 Gb/s as the MAC Data Rate**
 - **One of us expressed interest in a 40 Gb/s MAC data rate**

Consensus on Data Rate

- Another way to look at it



Consensus

- **A reach objective of 0 – 2 / 10 km on SMF**
 - **80% of us are using LR optics for less than 2 Km reach**
- **A preference to use the same solution for 150 / 300m that I use for 2 / 10km**
- **A preference to use single pair fiber solutions over multi-pair fiber solutions**
- **A preference to use a single interface solution over a multi-interface solution**

- **We realize we do not have a large number of participants and ultimately objectives will be adopted by the HSSG**

Supporters

Henk Steenman

Jason Weil

Lane Patterson

Eli Dart

Arnold Nipper

Hong Liu

Takejiro Takabayashi

Ted Sopher

Joe Lawrence

Brent Draney

Mike Hughes

Kurt Erik Linqvist

Pete Shoenmaker

Takeshi Tomochika

Jan Hoogenboom

Masato Yamanishi

Satoru Tsurumaki

Ted Seely

Mikael Abrahamsson

Vincent Houwert

Adam Bechtel

Amsterdam Internet Exchange

Cox Communications

Equinix

ESnet

Frankfurt IX

Google

Japan IX

LBNL

Level 3 Communications

NERSC

London IX

NetNod

NTT Communications

NTT Communications

Open Peering

Softbank BB

Softbank BB

SprintLink

Tele2

TrueServer

Yahoo!

Thanks!

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- **If you have questions or comments:**
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