A Closer Look at the Internet's Standards Setting Process

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Different Views

“The Internet standards development process

is by far

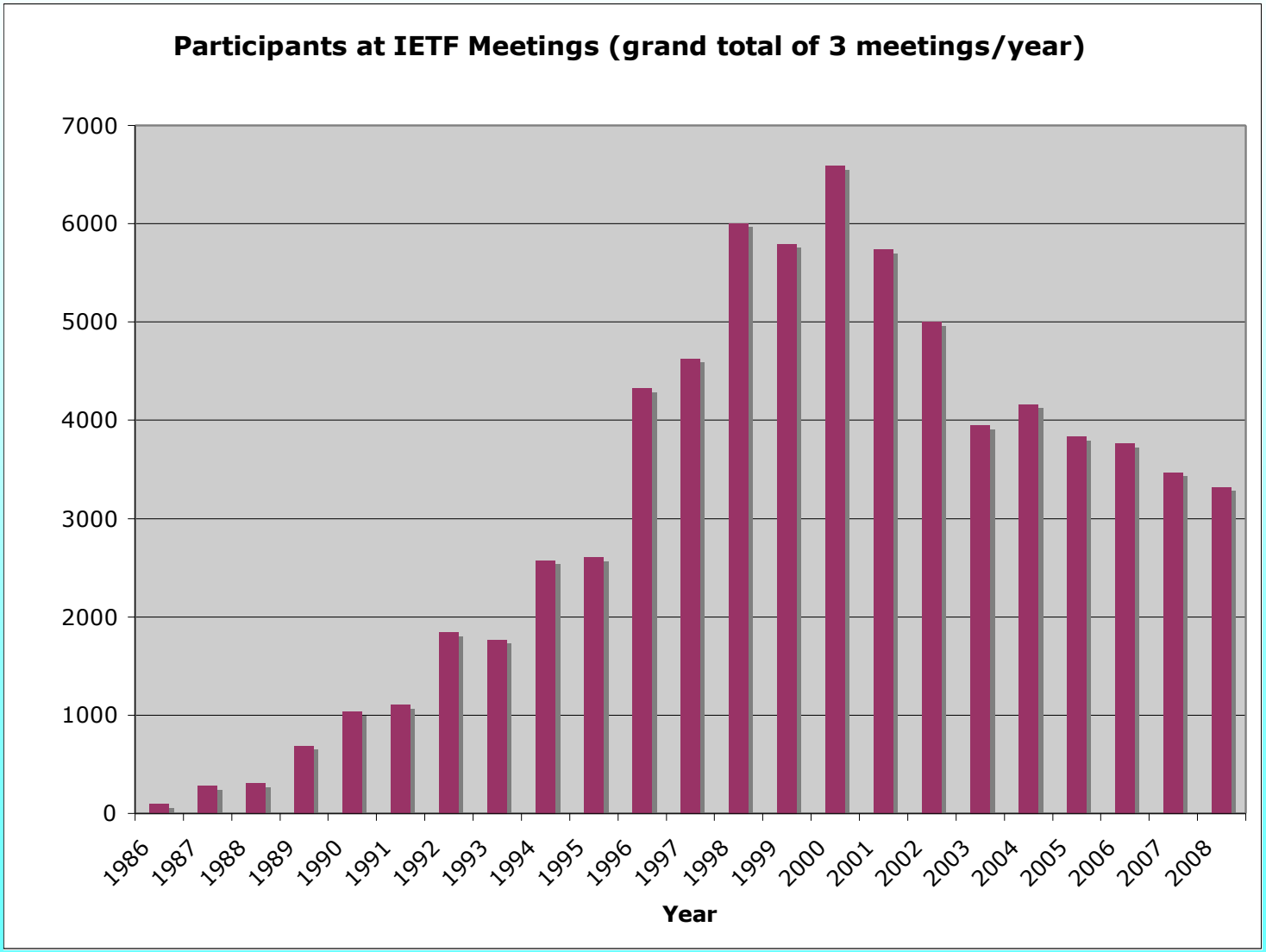
the best in the business.”

(Anthony M. Rutkowski, 1995)

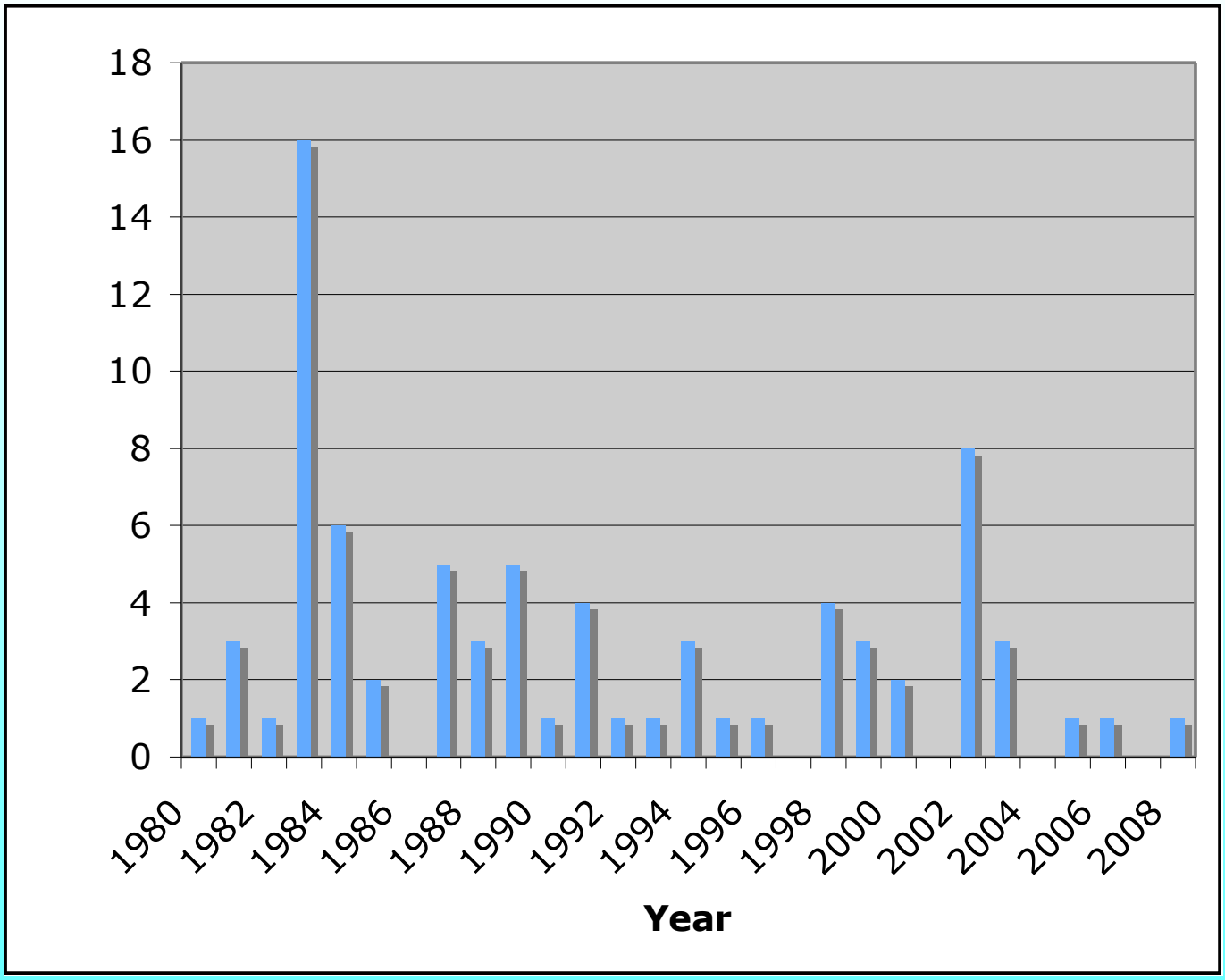
“Is it Indeed .....!!??”

(Kai Jakobs, at least since 1998)

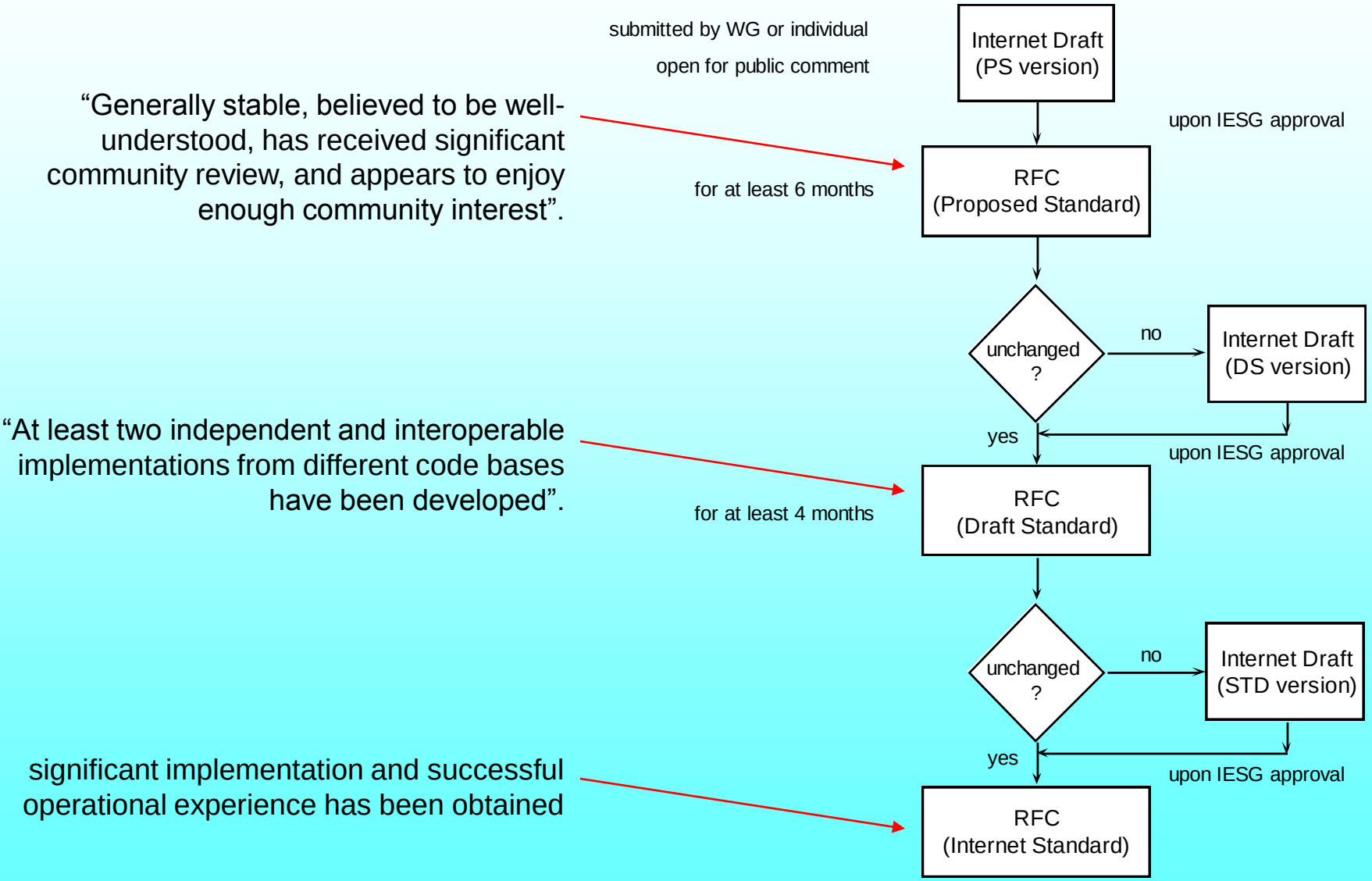
Trends in the IETF I



Trends in the IETF II



The IETF Process - Overview

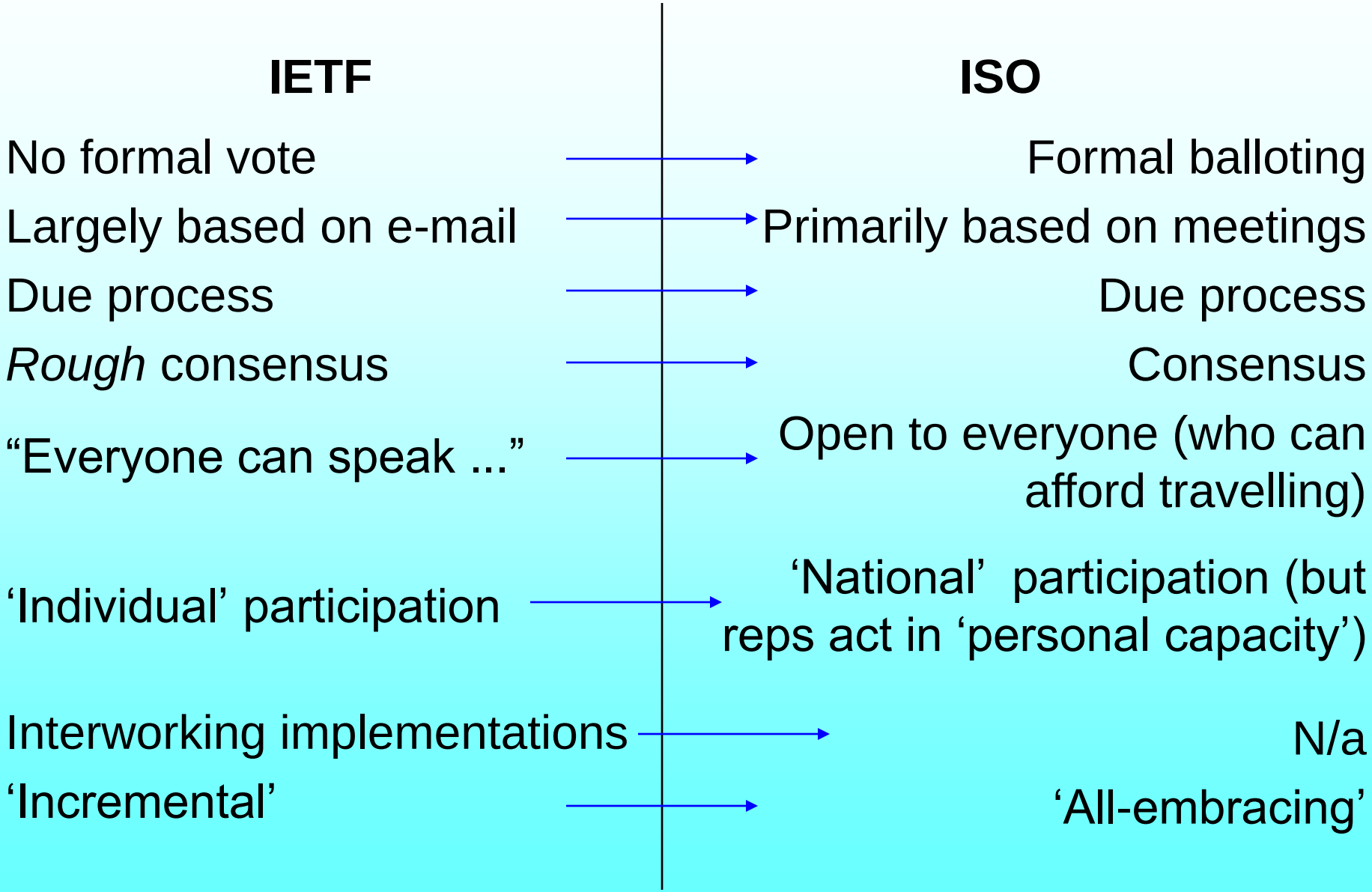


And Some Observations

The Process

- was ‘designed’ in the 80s (and written down in 1992), to function within a pure research environment,
- worked perfectly well until the mid 90s, when the WWW (and thus large-scale commercial use of the Internet) got off the ground,
- has been experiencing problems since then, not least due to
  - an extremely high numbers of participants,
  - increasingly high commercial stakes.

Characteristics of the Processes



Voting and (Rough) Consensus

Consensus: “General agreement, characterized by the absence of sustained opposition to substantial issues ...”.

Rough consensus: open to interpretation.

=>could enable faster and more efficient decision making,

=>makes life easier for ‘naysayers’ and ‘loudmouths’.

Voting offers a simple mechanism to progress further (or to terminate work).

“Everyone Can Speak”

But will anyone listen?

We may observe (according to a smallish survey)

- the 80/20 rule applies
- typically ≈ 15% obstructionists on the average WG,
- no mechanisms available to deal with them,
- you have to be at the meetings to defend your proposal (as opposed to just be active on the mailing list)

‘Individual’ Participation?

- Motivated individuals carry the process.
- These individuals need support from their employers. Therefore, they
  - are more likely to be employed by manufacturers,
  - are likely to push corporate proposals,
  - may otherwise be subject to corporate reprisals.

Who pays the piper calls the tune .....

Interworking Implementations

- necessary condition to proceed on the RFC standard track,
- makes the IETF process stand out from its 'competitors'.

But

- refers to correctness and interoperability,
- implementations close to prototypes,
- need not be employed in a real production environment.

Incremental Design

- evolutionary,
- relatively small modules that are able to interoperate,
- enables flexible adaptation to changing environments,
- allows to react quickly to emerging new requirements,
- avoids ‘installed-base hostility’,
- supports scaling.

But:

- risk of loosing the big picture.

Problems Identified by the IETF I

- “Participants in the IETF do not have a common understanding of its mission.
- The IETF does not consistently use effective engineering practices.
  e.g., poorly defined success criteria, lack of reviews, metrics, and auditing, no ‘project management’.
- The IETF has difficulty handling large and/or complex problems.
- Three stage standards hierarchy not properly utilized.
- The IETF’s workload exceeds the capacity of the fully engaged participants.
- Working Group dynamics can make issue closure difficult.
- IETF participants and leaders are inadequately prepared for their roles”.

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Problems Identified by the IETF II

The IETF management structure is not matched to the current size and complexity of the IETF

- Span of authority
- Workload of the IESG
- Procedural blockages
- Consequences of low throughput in IESG
- Avoidance of procedural ossification
- Concentration of influence in too few hands
- Excessive reliance on personal relationships
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Summarising the Major Issues

Goals	Issues	
technical excellence	• The IETF has difficulty handling large and/or complex problems	There's a real risk that they loose the big picture.
openness and fairness; 'rough consensus'	• Concentration of influence in too few hands • Excessive reliance on personal relationships • Difficulty making technical and process appeals • 'Naysayers' and 'loudmouths' may obstruct the process • 'Individual participation' is a myth	ca. 20% of the members decide about the content of the specification.
Timeliness	• Working Group dynamics can make issue closure difficult • The IETF does not consistently use effective engineering practices • Procedural blockages	The IPv6 spec was published as 'Proposed Standard' in 1995; has been at 'Draft Standard' level since 1998.

Consequences

The process

- is susceptible to obstructionists,
- may (easily?) be influenced by active individuals with a (hidden, corporate) agenda,
- doesn’t scale too well,
- has never been designed to work in an environment where financial stakes are that high.

Moreover

- The IETF has too bright a view of itself and its standards setting process, IMHO!

  "don't especially think it needs defending as long as we continue to get around 2000 people showing up three times a year" was a typical comment.

- The IETF may be in danger of marginalisation!

  # of meeting attendees declining; 3 new standards in the past 5 years, IPv6 ‘Proposed Standard’ for over 10 years

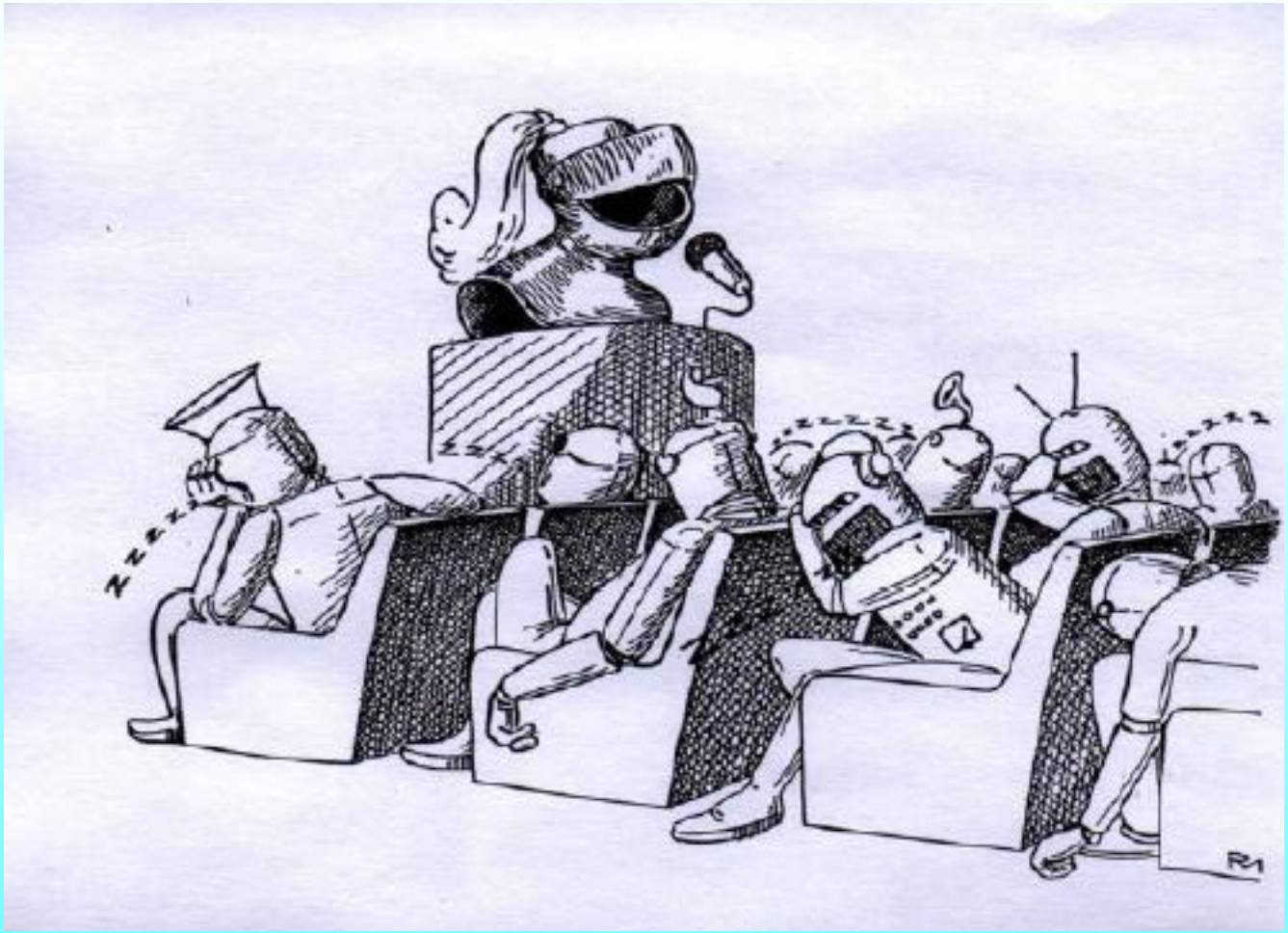
On the Other Hand

- The process is designed to be fast and flexible.
- Publication even of draft documents is most helpful.
- The specifications are technically sound (in most cases).
- The incremental design approach allows a high degree of adaptability.

What C/Should be Done?

- Adapt the process to today's realities. E,g.,
  - introduce 'voting' as a last resort,
  - implement hard deadlines,
  - introduce project management,
  - try and find a middle way between 'incremental' and 'all embracing'
- Acknowledge the importance of the meetings (as opposed to the e-mail lists).
- Say 'Goodbye' to the idea that everyone is participating for the greater good.

Thank You Very Much for Your Attention



Questions, Please .....