

Department of Justice



National Academy of Science Presentation

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Efficiency, Qualification & Valuation of Spectrum

28 February 2006

Spectrum Management Office

History

The President's Communications Policy Board Report “Telecommunications – A program for Progress”

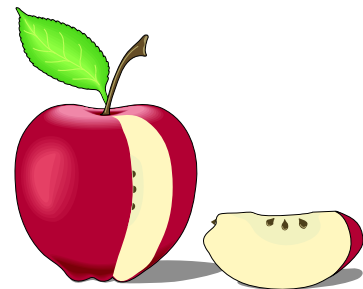
Issue #4: *“How shall the United States develop policies and plans to foster the soundness and vigor of its telecommunications industry in the face of new technical developments, changing needs and economic developments.”*

- March of 1951

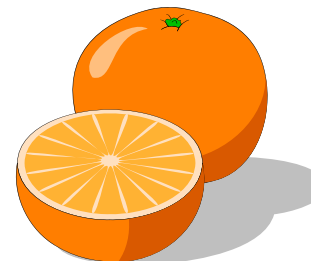
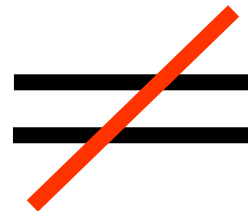
Incentive?

“Incentive” Defined: *something that instigates or spurs a determination or action*

- **Incentives must be based on an activity’s specific purpose, processes, and operating environment to be effective**
- **An incentive for one activity may not necessarily be appropriate or apply to other activities**



Federal Activity



Commercial Activity

Mission Based Incentives

- **Federal Operations typically provide *MANDATED* services in support of the overall public good**
 - ▶ Federal services are primarily mission driven to produce effective results
 - ▶ The provision of Federal services may not be based on generally accepted economic principles (profit orientation)
 - ▶ With the exception of cost, the value of Federal services are not typically quantified in monetary terms
 - ▶ Federal services routinely involve “Safety of Life” considerations

Directive Based Incentives

The Narrowband Mandate

- Federal agencies must use more spectrum efficient technologies at least as efficient and effective as that available within commercial industry
- NTIA plan submitted narrowbanded the 162-174 MHz and 406.1 -420 MHz bands

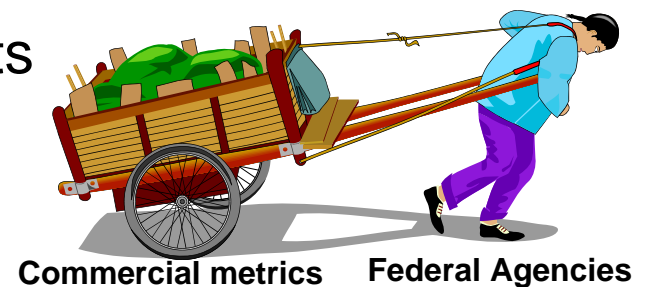


The Realities of Compliance

- Available commercial technology may not support unique Federal mission requirements
- Federal implementation is intrinsically linked to associated appropriations
- Directives tend to enforce conformance to standards versus deriving possible efficiencies

Efficiency Based Incentives

- **Overall Federal “Efficiency” calculations include considerations for sharing, broadness of application, interoperability, and longevity of use**
- **An efficiency is best achieved when the activity has influence and control over the various factors that create that measure of efficiency**
 - ▶ Availability and flexibility of resources
 - ▶ Budget and investment planning
 - ▶ Operational processes and requirements



Budget Based Incentives

- ▶ **Federal Budget-based funding and acquisition processes vary drastically from that of the commercial world**
 - ▶ New funding must compete against relatively inflexible and mixed mission priorities
 - ▶ Required appropriations are subjected to, and based in political versus established business processes
 - ▶ Investment planning is complicated by inconsistent budgets and funding



Incentives for Improved Spectrum Efficiency

- ▶ **Allow technology to be a primary driver in the determination of achievable spectral efficiencies**
 - ▶ Encourage devices that demonstrate multi-functional flexibilities
 - ▶ Allow technology to set the standards in spectrum dependent service and use
- ▶ **Realistically characterize Federal operations in appropriate process, economic, and monetary terms**
 - ▶ Level the spectral playing field with commercial industry in the analysis of possible efficiencies and market value
 - ▶ Allow fair consideration of operational differences



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