RIA – Problem Definition

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Steps in the RIA Process

Implement the select option, and monitor

Compare the Options

Analyze Options

Define Desired Results

Define Possible Regulatory Measures

Define Goal

Define options for resolving the problem

Divide in to causes and consequences

Define the Problem

List all issues of importance

RIA. Data Gathering and Consultation

USAID. (2004). RIA Manual. 978-9940-9401-1-9. http://regulatoryreform.com/wp-content/uploads/2015/02/Montenegro-USAID-RIA-Manual-2011.pdf

How to Define a Problem?

* Determine the extent of the problem
  * From relevant stakeholders
* Determine the causes
* Determine the target population and distribution of impacts
* Determine whether the problem is lack of regulation
* Indicate why the problem has not been resolved by the existing regulatory framework

Case: 1

TSPs have inadequate spectrum

Consumers experience QoS issues

There is a mismatch between the spectrum capacity and traffic demand across time and space

Most of the TSPs have fragmented spectrum

We don't have tools for dynamic spectrum management

Spectrum is under/ un utilized by spectrum holders, esp PSUs and Government

Public sector agencies and government hold substantial amount of spectrum

Some of the TSPs have more spectrum while some of them have less, compared to demand

Spectrum Geo Location database does not exist in India

Today's 4G/5G technologies require at least 10 MHz or more contiguous spectrum

Emerging technologies improve spectrum utilization

Spectrum efficiency is less if the spectrum is fragmented

Spectrum Utilization is sub-optimal

Technologies such as SSA/ DSA are being implemented by carriers in other countries

What is the Problem?

What are the Causes?

Spectrum is under/ un utilized by spectrum holders, esp PSUs and Government

Some of the TSPs have more spectrum while some of them have less, compared to demand

We don't have tools for dynamic spectrum management

Public sector agencies and government hold substantial amount of spectrum

Today's 4G/5G technologies require at least 10 MHz or more contiguous spectrum

Spectrum Geo Location database does not exist in India

What are the Consequences?

Consumers experience QoS issues

There is a mismatch between the spectrum capacity and traffic demand across time and space

TSPs have inadequate spectrum

Most of the TSPs have fragmented spectrum

Spectrum utilization is sub-optimal

Spectrum efficiency is less if the spectrum is fragmented

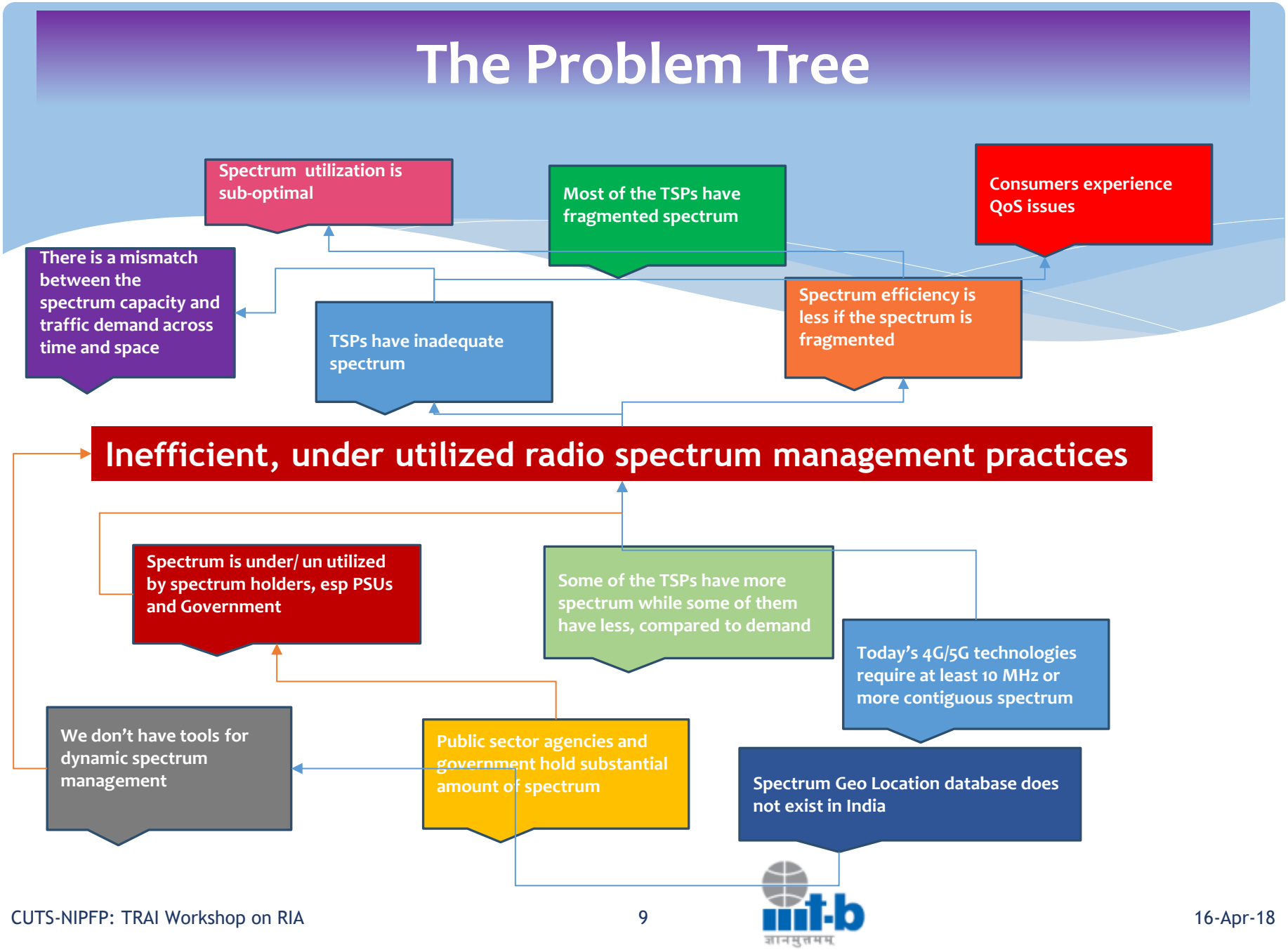
Pitfalls in Defining the Problem

- Too narrow a definition of the problem, which leads to the selection of a specific alternative not taking into account other possible alternatives
  - Require Geo Location Spectrum Database
- Describing the solution instead of the problem
  - Require Spectrum Sharing practices between Govt and TSPs
- Defining the problem as a lack of something
  - There are not adequate tools for dynamic spectrum sharing
- Defining the problem as a strictly technical issue
  - Download speeds are much lower than what is mandated
- Lack of insight into the incentives of the regulated subjects
  - Why should government or other agencies share their spectrum holding?
- Lack of information on the magnitude of the problem
  - What is the peak supply-demand spectrum gap
- Relatively small problem inflated by the media (which creates political need for regulation)
  - Spectrum is a scarce resource and hence needs to be assigned for exclusive use

Problem Tree

* The "Problem Tree" is an extremely useful instrument that enables the "branching" of the problem into causes and consequences.
* The steps in creating a problem tree are:
  * list all possible problems related to the analyzed area, taking into account that only real/actual problems, and not possible or future ones, should be considered;
  * determine the main problem;
  * determine which problems are "*causes*" and which "*consequences*";
  * arrange the "causes" and "consequences" in a hierarchical order – determine whether they are connected and their mutual relationship.

The Problem Tree



Define the Objectives

* The second step in the Regulatory Impact Analysis is the clear defining of objectives that the proposed measures would address. A clear presentation of objectives enables better oversight over the implementation and evaluation by using clearly defined indicators
  * Formulate goals, results and regulatory measures so that they correspond to the problems, consequences and causes
  * Limit the number of goals, and clearly set priorities
  * Ensure goals are in accordance with strategies and programs of the Government

SMART Objectives

* **S**pecific: objectives should be precise and concrete enough not to be open to varying interpretations. They must be understood similarly by all.
* **M**easurable: objectives should define a desired future state in measurable terms, so that it is possible to verify whether the objective has been achieved or not.
  * Such objectives are either quantified, or based on a combination of description and scoring scales.
* **A**chievable: if objectives and target levels are to influence behavior, those who are responsible for them must be able to achieve them
* **R**ealistic: objectives and target levels should be ambitious – setting an objective that only reflects the current level of achievement is not useful – but they should also be realistic so that those responsible see them as meaningful.
* **T**ime-dependent: objectives and target levels remain vague if they are not related to a fixed date or time period.

Consequences

- Spectrum utilization is sub-optimal
- There is a mismatch between the spectrum capacity and traffic demand across time and space
- Most of the TSPs have fragmented spectrum
- Consumers experience QoS issues
- TSPs have inadequate spectrum
- Spectrum efficiency is less if the spectrum is fragmented

Desired Results

- Spectrum should be efficiently utilized
- The TSPs should be assigned contiguous spectrum
- The supply and demand of spectrum should be matched across time and space
- Consumers should have good QoS and their services should not be affected due to inadequate spectrum
- Spectrum efficiency should be maximal subject to implementation constraints

Problem

Inefficient, under utilized radio spectrum management practices

Goal

Spectrum should be optimally and efficiently used

- Spectrum is under/ un utilized by spectrum holders, esp PSUs and Government
- Some of the TSPs have more spectrum while some of them have less, compared to demand
- Today's 4G/5G technologies require at least 10 MHz or more contiguous spectrum
- We don't have tools for dynamic spectrum management
- Spectrum Geo Location database does not exist in India
- Public sector agencies and government hold substantial amount of spectrum

Regulatory Measures

- Allow dynamic spectrum sharing between different spectrum holders
- Make the spectrum rights flexible - primary and secondary, with primary having priority over spectrum rights
- Audit to ensure optimal utilization of spectrum
- Create Geo location spectrum database

SMART

- Spectrum utilization levels of PSUs/ Government/ TSPs to attain a minimum of:
  - 60% in the first year; 75% in the second year and 90% from 3rd year
  - Spectrum audit of all spectrum holders to be carried out every year
- A geo-location spectrum database to monitor use of spectrum to be implemented in the next 3 years across all LSAs
- Spectrum sharing across PSUs/ Govt/ TSPs to occur
  - Contract based in the first 2 years
  - Dynamic and demand based from 3rd year onwards
- Coverage and capacity of TSP networks to meet QoS benchmark levels up to 100% across all LSAs

The Options

* There is existing framework for spectrum sharing, trading and leasing. No further intervention is required
* Need a regulatory intervention to promote flexible and dynamic spectrum management practices
  * Create the required infrastructure such as Geo Spectrum Database and let the TSPs and other entities use the infrastructure
    * Let the market determine how far it will be implemented
    * Mandate certain steps to maximize spectrum utilization including

Case 2: Over The Top Services

OTT services are not licensed services

OTT services are inherently non-jurisdictional

OTT services mimic very closely the traditional telecom services

OTT services are substitutes of traditional telecom services

OTT services can be provided at much lesser prices to end consumers

OTT services are large in numbers compared to traditional telecom services

OTT services use Internet which is a shared network

OTT services consume scarce resources such as radio spectrum

OTT services do not pay any regulatory fees though they provide services to consumers

OTT services use "zero price" model

OTT services provide alternative communication services for customers

OTT services continue to evolve

OTT services are innovative and provide consumer benefits

OTT services are mainly provided by global firms

OTT services collect consumer data and hence might violate privacy of individuals

What is the Problem?

Case 3: Identity verification requirements for Telecom Services

What is the Problem?

90% of telecom connections in India are pre-paid

SIM cards and connections are used for illegitimate activities

ID Verification is essential for the State to monitor criminal activities and improve national security

The retailers do not have digital infrastructure to verify ID

Retailers do not do due diligence in verification

Majority of ID verifications are done at retailers

Liability for non-compliance rests with TSPs and not with the retailers

Verification of ID at retailers consume lot of consumer time

ID verification is done both at PoS and at the time of activation

The TSPs have little control over the ID verification process at the retailers

ID verification is one of the major cost items for TSPs

Current ID checks can be circumvented through ID fraud techniques

Consumers are weary of providing their ID credentials at retail shops

Case 4: Handset/ Service Bundling

Bundling reduces device acquisition cost to consumers

Customers anyway pay device cost through service subscriptions

Bundling creates vertically integrated services

Bundling increases switching cost for consumers

Bundling hurts competition in the handset market

Pure bundling locks the customers

Bundling hurts competition in the services market

Bundling creates a "walled garden" of services for customers

TSPs can provide improved customer experience through bundled handsets

Mixed bundling allows customer flexibility

What is the Problem?

Case 5: QoS of Data Services

What is the Problem?

It is inherently very difficult to measure QoS for data services

Customers experience poor QoS/ QoE

TSPs are constrained due to issues beyond their control in providing QoS

Data services are of so many varieties that it is difficult to come up with a comprehensive QoS framework

Majority of ID verifications are done at retailers

Consumers are not cognitively constrained in assessing QoE

It is difficult to pinpoint who is responsible for poor QoS

The evolving applications and services make QoS measurement difficult

Data services extend beyond national jurisdiction

The TSPs have little control over the ID verification process at the retailers

It is difficult to define QoE as it might differ from user to user

QoE can be different across users, applications, and networks

QoE is very dynamic and depends on time and space

Benchmark metrics for QoE are still evolving