

Optimal Policy and Regulatory Frameworks: Centralized or Decentralized?

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*Back from the Ashes: Regulation intervention
in an online world
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Is there an optimal institutional framework to manage policy and regulate ICT in the current environment?

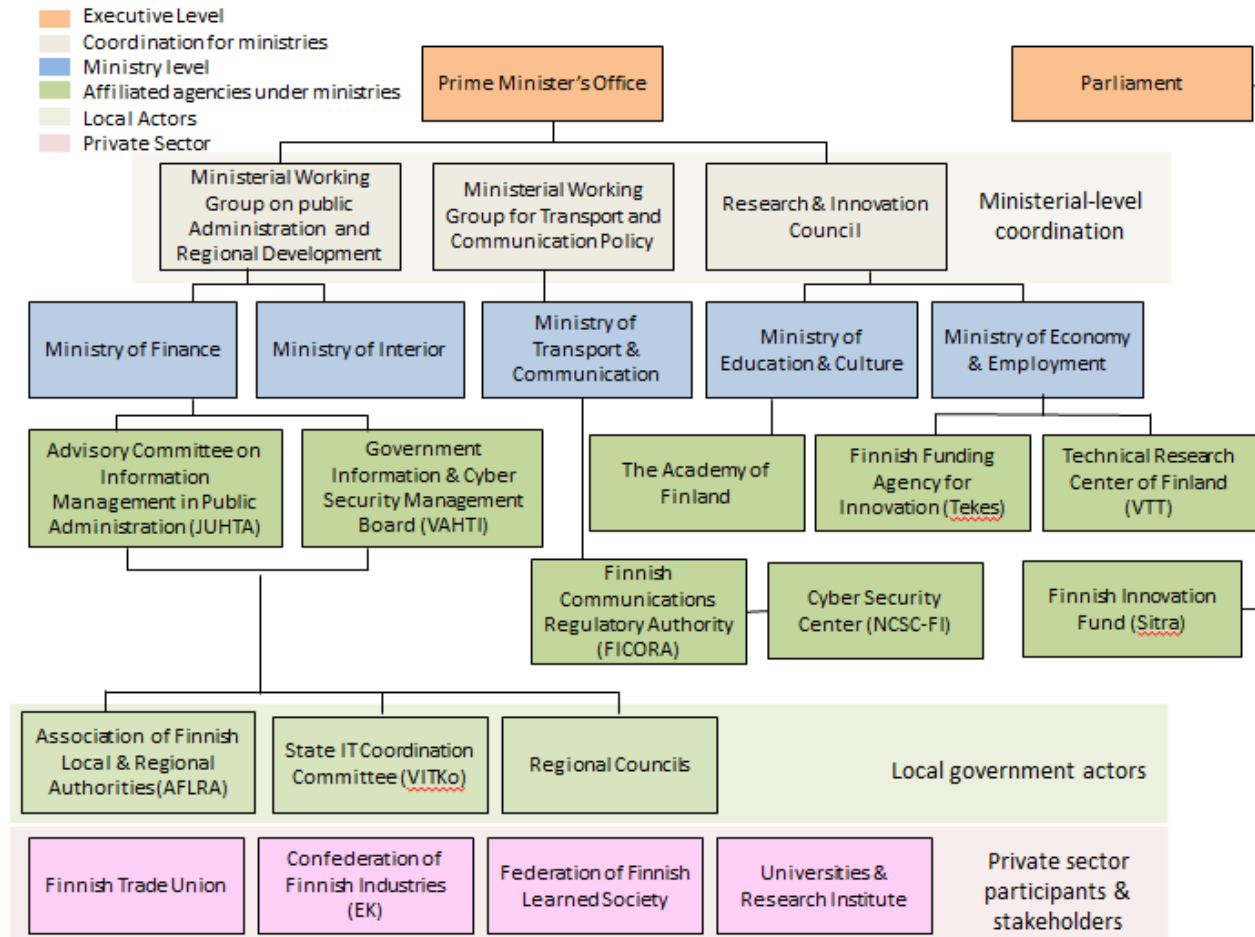
- As general purpose platforms, ICT have a holistic social and economic impact
- In general terms, most government, agencies and branches tend to participate in formulating policy and even regulating one or more areas of the ICT eco-system
- In this context, are there institutional frameworks that would be more conducive to harness the potential of ICT and accelerate their development?
- Beyond classical political system variables (e.g. centralization of policy-making), are there institutional frameworks that are better suited by country?
 - Advanced information societies?
 - Emerging nations?
- How do we manage the participation of private sector and civil society?
- How do we arrange for inclusion of sub-sovereign entities (e.g. States, municipalities, etc.)?
- What does data say about impact of institutional frameworks?

Methodology

- Case studies
 - South Korea, Finland, Singapore, Colombia, and Chile
 - Development of institutional ideal types
 - Assessment of fit between ideal types and country context
- Quantitative impact analysis
 - Impact of institutional changes on speed of ICT development
 - Simple econometrics

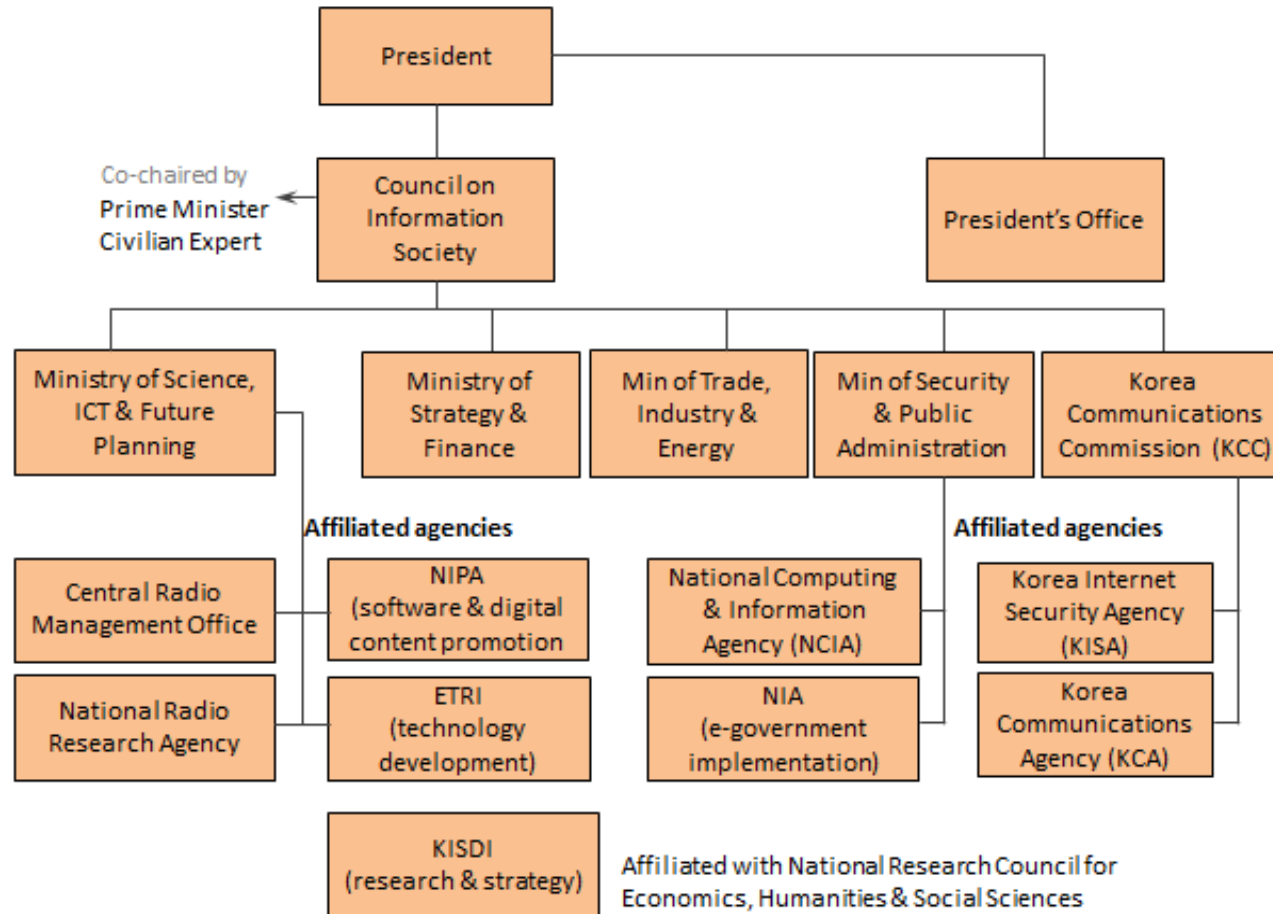
Case study data: Finland has a decentralized institutional model

FINLAND: ICT POLICY INSTITUTIONAL FRAMEWORK



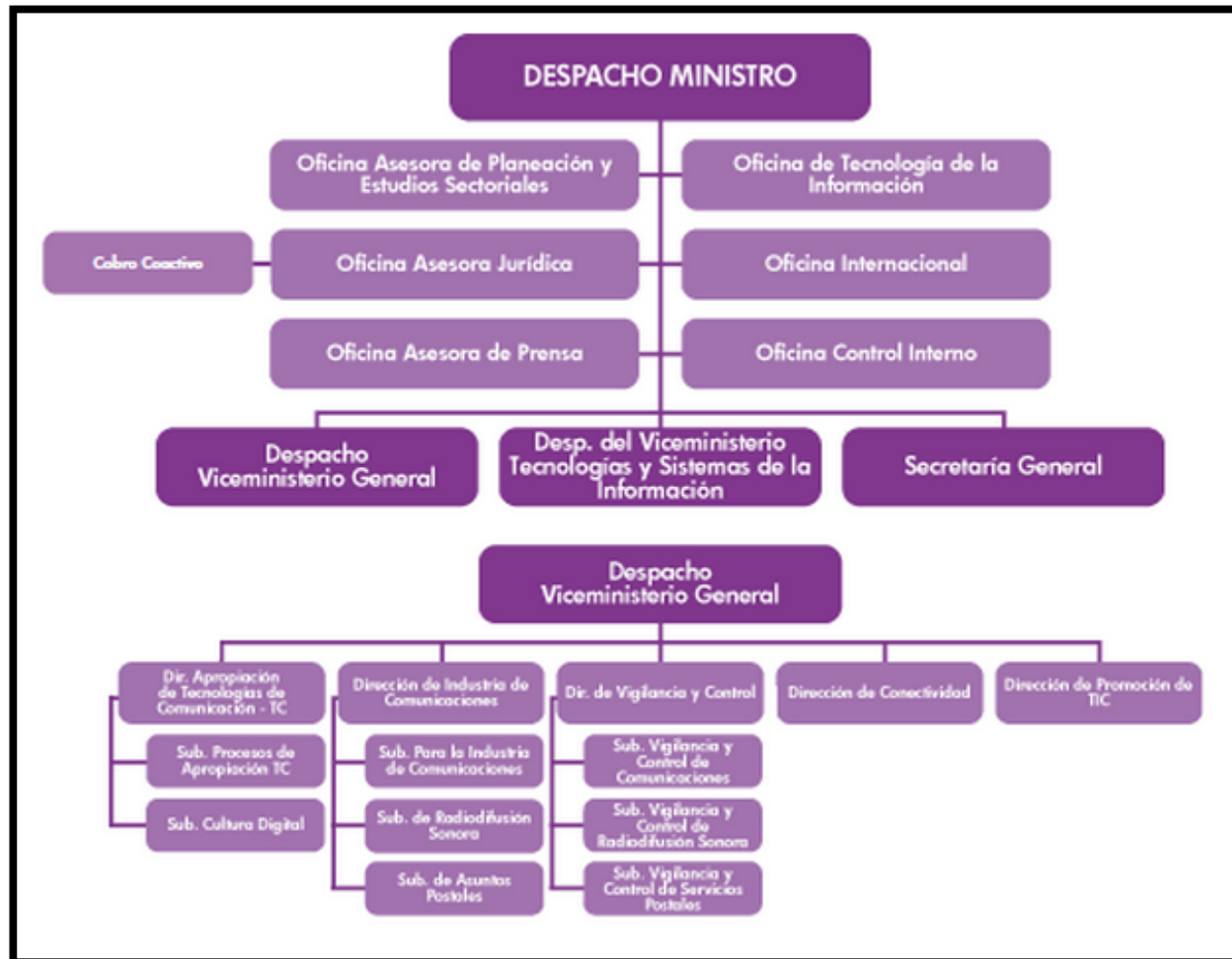
Case study data: South Korea has built a centralized model

SOUTH KOREA: ICT POLICY INSTITUTIONAL FRAMEWORK



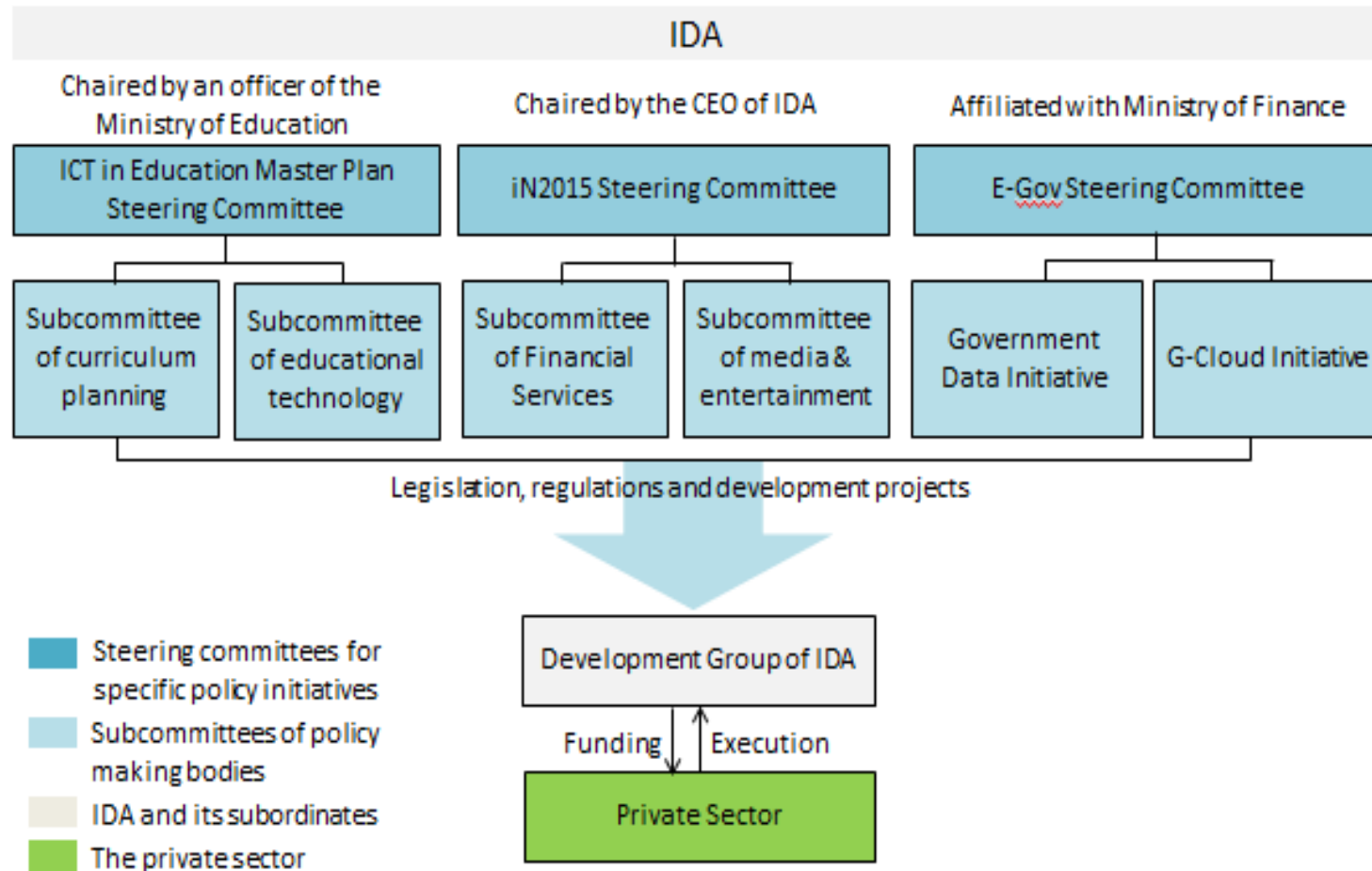
Case study data: Colombia has also structured a centralized model

COLOMBIA: ICT POLICY INSTITUTIONAL FRAMEWORK



Case study data: Singapore has deployed an “agency” model

SINGAPORE: ICT POLICY INSTITUTIONAL FRAMEWORK



The analysis of case study data was structured around building institutional “ideal types”

1. Formalize the **dimensions** to analyze each case study model

- Dimensions of institutional models that allow us to understand the differences and similarities of each case study
- Centralized or decentralized model?
- Is it the responsibility of a Ministry or is it an agency reporting to a Ministry?
- If Ministry, would it be Ministry of Economic development or Ministry of Communications?
- Is the private sector and/or civil society involved or not in policy formulation?
- If it is, is involvement formal or informal?



2. Construct institutional model **ideal types**


- Ideal type: abstract model used to compare different phenomena in a systematic fashion, isolating the essential features
- In this case, the ideal types are alternative institutional models that enable us to evaluate the international experience

First step: isolate differentiating dimensions of institutional models


| Dimensions | Case studies |
|------------------------------------|---|
| Centralized or decentralized model | <ul style="list-style-type: none"> Centralized: Singapore (IDA), Colombia (MINTIC), South Korea (Ministry of Science, ICT and Planning) Decentralized: Finland (three inter-institutional coordinating groups) |
| Inter-institutional coordination | <ul style="list-style-type: none"> All models have a coordinating mechanism Highest coordinating responsibility (Ministry or Prime Minister): Finland, Korea, Colombia Medium level coordinating responsibility (Agency Director, Deputy undersecretary): Singapore, Chile |
| Private sector participation | <ul style="list-style-type: none"> Formal (private sector representatives in decision making entities): Korea, Singapore Informal (public consultations, “revolving door”): Finland, Colombia, Chile) |
| Involvement of Executive Branch | <ul style="list-style-type: none"> Highest (President or Prime Minister): Korea, Colombia, Chile Medium (Ministers, Agency Executive): Finland, Singapore |

Second step: Three institutional model “ideal types” were defined


| Dimensions | Chile | Colombia | Korea | Finland | Singapore |
|---|-------------|-------------|-------------|---------------|-------------|
| Institutional Model | Centralized | Centralized | Centralized | Decentralized | Centralized |
| Authority of coordinating mechanism | Low | Medium | High | High | Low |
| Private sector participation | Informal | Informal | Formal | Informal | Formal |
| Involvement authority of Executive branch | High | High | High | Medium | Low |



Centralized Model

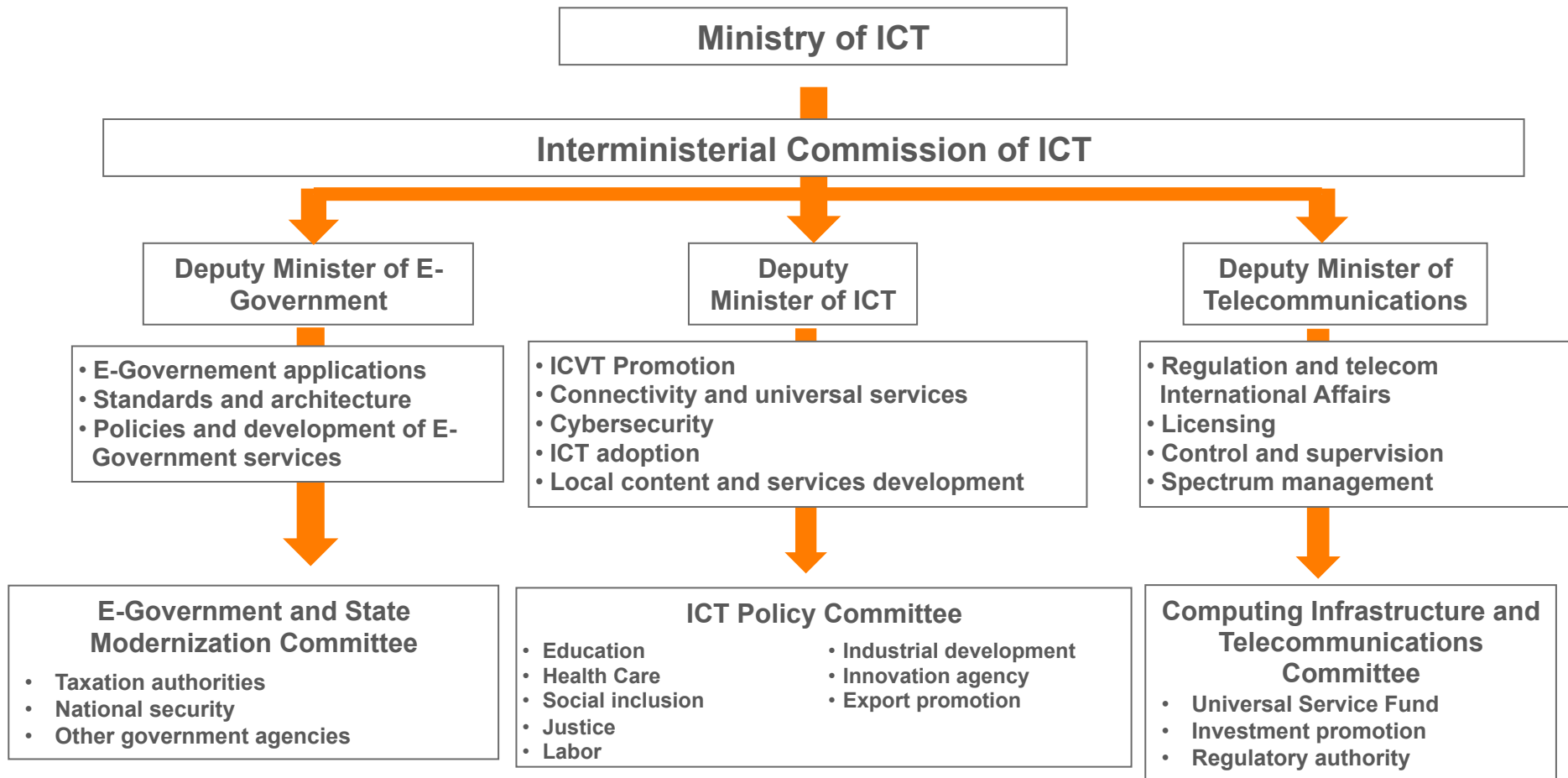


Decentralized Model

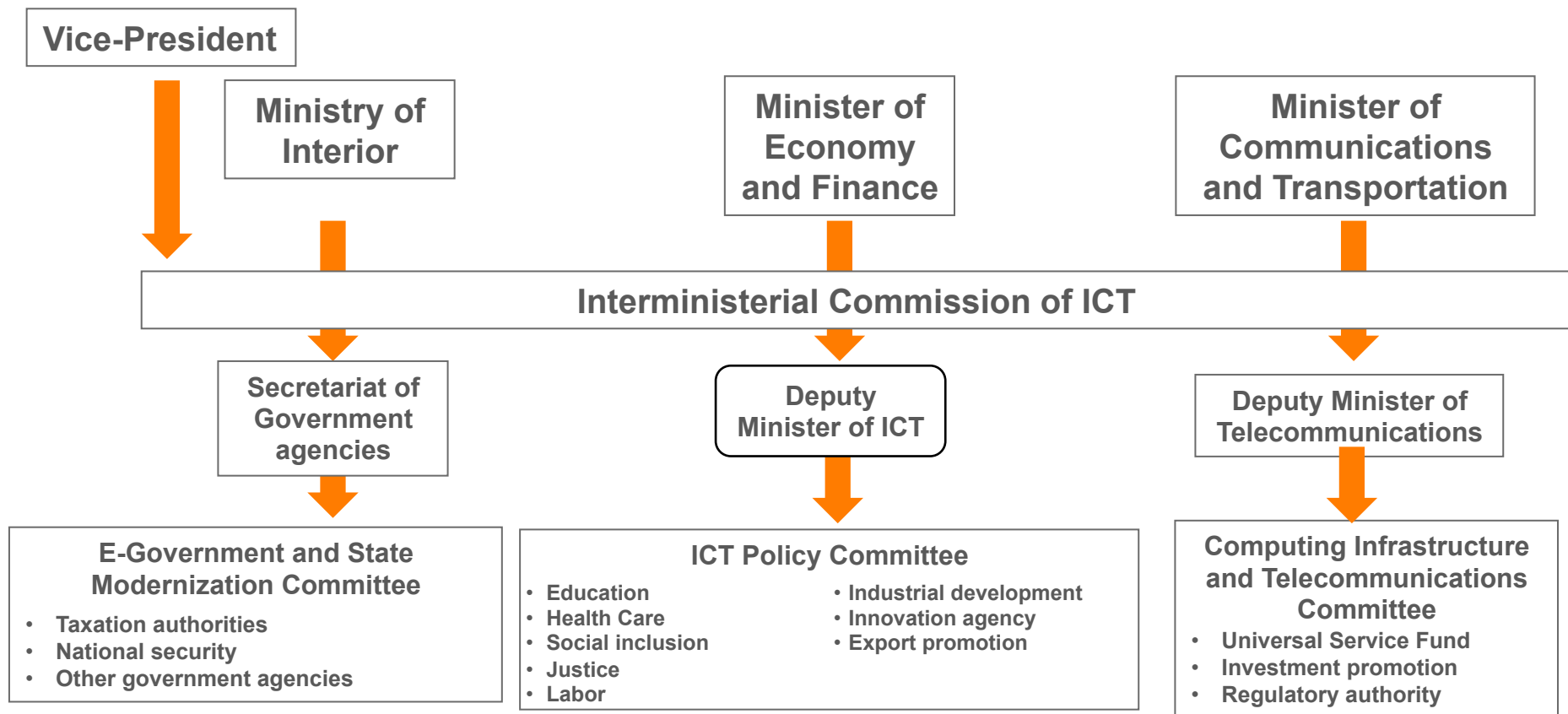


Agency Model

Example of centralized model: high level design



Example of decentralized model: high level design



Changes in the institutional framework are linked to a country's path to development of an ICT infrastructure

POLITICAL-INSTITUTIONAL FACTORS AND GROWTH OF DIGITIZATION INDEX

| Country | Point of trend change | CAGR | | Poicy and Institutional Changes |
|------------|-----------------------|---------|---------|--|
| | | Before | After | |
| Chile | 2008 | 4,79% | 9,10 % | <ul style="list-style-type: none"> • Digital Strategy • Creation of Interministerial Committee for Digital Development |
| Uruguay | 2009 | 6,09 % | 11,91 % | <ul style="list-style-type: none"> • Ceibal Plan |
| Panamá | 2008 | 6,45 % | 10,55 % | <ul style="list-style-type: none"> • Plan "Internet para Todos" • Creation of a National Authority for State Innovation |
| Costa Rica | 2010 | 4.06 % | 15,21 % | <ul style="list-style-type: none"> • National broadband strategy • Transfer of Vice-ministry of Telecommunications to Ministry of Science and Technology |
| Argentina | 2009 | 6,00 % | 8,15 % | <ul style="list-style-type: none"> • Development of Argentina Conectada Plan • Creation of general Ccoordination of Argentina Conectada Plan within national planning ministry |
| Ecuador | 2011 | 6,32 % | 10,89 % | <ul style="list-style-type: none"> • Presentation of Ecuador Digital Plan • Creation of Information Society Ministry (8/2009) |
| Colombia | 2011 | 10,22 % | 13,56 % | <ul style="list-style-type: none"> • Creation ICT Ministry • Development of Vive Digital Plan |
| Brasil | 2011 | 7,53 % | 11,99 % | <ul style="list-style-type: none"> • Presentation of National Broadband Plan • Leadership assumed by Casa Civil (Executive Branch) |

Source: Author

Three mechanisms of institutional impact on ICT sector development

- **Acceleration of public investment in ICT infrastructure**, which implies to an improvement in network reliability, and accessibility (that is to say penetration)
- **Higher efficiency in the development of tools and public policy initiatives**, which is driven by centralized policy development processes and consensus in the legislative branch
- **Government “signals” to the private sector that ICT represents a critical component of economic growth**; in response to this signal, the private sector reacts positively accelerating investment and commercial aggressiveness
- All three mechanisms can also take place simultaneously

The impact on ICT sector of changes in institutional framework have also been estimated statistically

| Independent variable: Digitization Index Growth Rate | Model 1 | Model 2 |
|---|----------------------|----------------------|
| Development of a National Broadband Plan | -0,0115 (0,0078) | -0,0181 (0,0109) |
| Development of a National Broadband Plan in prior year | 0,0338 (0,0139)** | 0,0383 (0,0143)** |
| Existence of an independent telecommunications regulatory authority | 0,0118 (0,020) | 0,0089 (0,0111) |
| Urban population | -0,0039 (0,0018)* | 0,0021 (0,0025) |
| Local credit availability | -0,0001 (0,0001) | 0,0010 (0,0004)** |
| GDP per capita | -0,0001 (0,0001) | 0,0002 (0,0002) |
| Constant | -0,272 (0,0831)** | -0,1484 (0,1388) |
| Fixed effects for year and country | Sí | Sí |
| Observations | 1.558 | 1.558 |
| R-Squared | 0,2177 | 0,2432 |

- A national broadband plan does not impact the digitization growth rate in the same year, but has an important effect the prior year
- This signal increases the digitization growth rate between 3.38% and 3.83%
- The presence of an telecom regulatory authority has no impact on the digitization growth rate, which could be due to the fact that for the period analyzed (2004-2013) more than 90% of countries already have one, according to the ITU

Nota: ***Significatividad estadística al 99%, **Significatividad estadística al 95%, *Significatividad estadística al 90%. Entre paréntesis los errores estándares robusto, agrupados a nivel regional.

Conclusion

- Changes in institutional frameworks have an impact on the rate of development of an ICT sector
- Three types of institutional models have been identified which can be positioned along the decentralization-centralization spectrum
- Centralized models appear to be more suited to emerging countries seeking to accelerate the rate of development of an ICT sector
- Decentralized models seem to be more suited in the case of advanced information societies where ICT has already been significantly adopted in production processes and the social fabric
- Institutional models appear to be migrating to processes aimed at incorporating the input of private sector, civil society, and sub-sovereign government entities (however, these processes range between more formalized (Asian countries) to informal (Latin America and European processes))

