

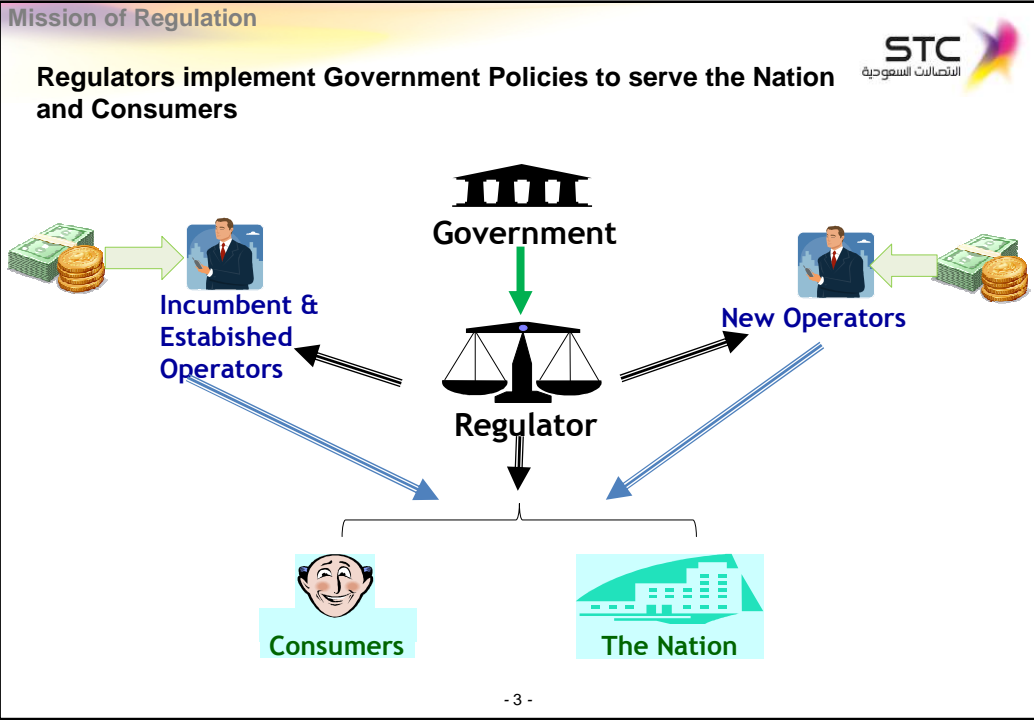
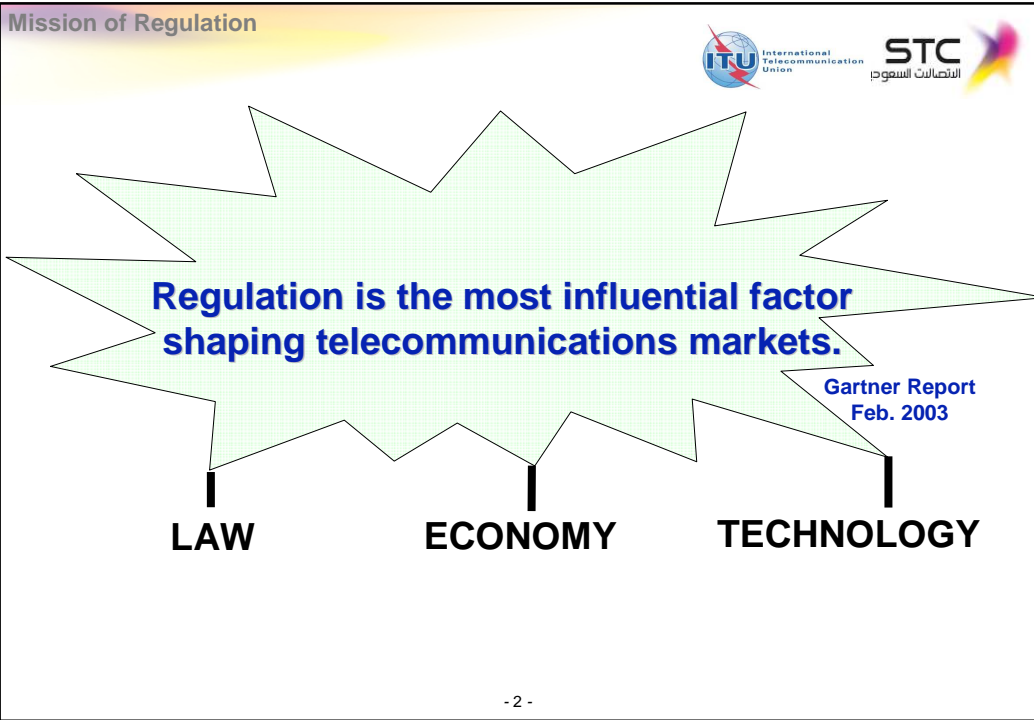
ITU Regional Development Forum 2010
On NGN & Broadband for Arab Region
Cairo 13 - 15 December 2010

On The Road to 3rd Generation Telecom Regulation

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Content

- ▶ **Mission of Regulation**
- ▶ **The Three Generations of Regulation**
- ▶ **3rd Generation Regulation**
- ▶ **Conclusions**
- ▶ **Appendices**



Similar Regulatory Objectives Anywhere Any Generation

Regulatory Objectives in order of Importance

- ▶ Satisfy consumer/Citizen/ Nation needs for affordable and quality services to enhance their livings and improve their productivities
- ▶ Increase national competitiveness through use of ICTs (eHealth, eGovernment, eEducation, eCommerce,.....)
- ▶ Encourage investment in cost efficient information infrastructure
- ▶ Ensure Justice and Efficiency of utilizing National Scarce Resources (such as Frequencies, Numbering)
- ▶ Ensure no barriers for new market entries to facilitate competition (e.g. network interconnection, fair wholesale upstream market, fair agreements, open standards,)

Legislations of Administrative Laws shapes how authority and legal powers are exercised in a fair and balanced manner

Regulator Principles

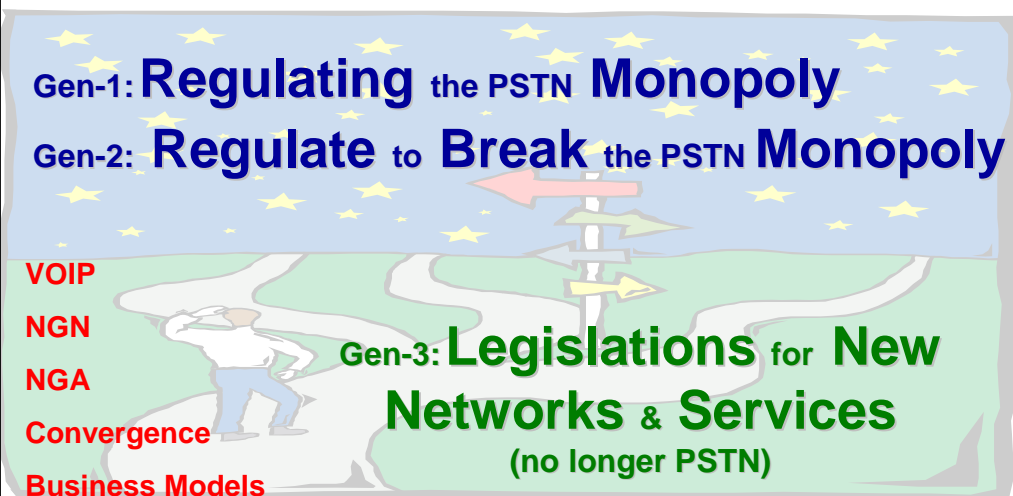
Transparency	Clarity, Openness, Consistency & Predictability
Efficiency	Speed of performing Roles and Duties
Independence	Perform without external influences
Objectivity	Actions must have stated regulatory objective
Proportionality	Regulation proportional to the problem
Reasonableness	It must be possible to explain steps being taken
Non-Discrimination	No discrimination between players except when there is a justified and revealed reason

Regulatory Attitudes vary according to market maturity & Trusted Operators

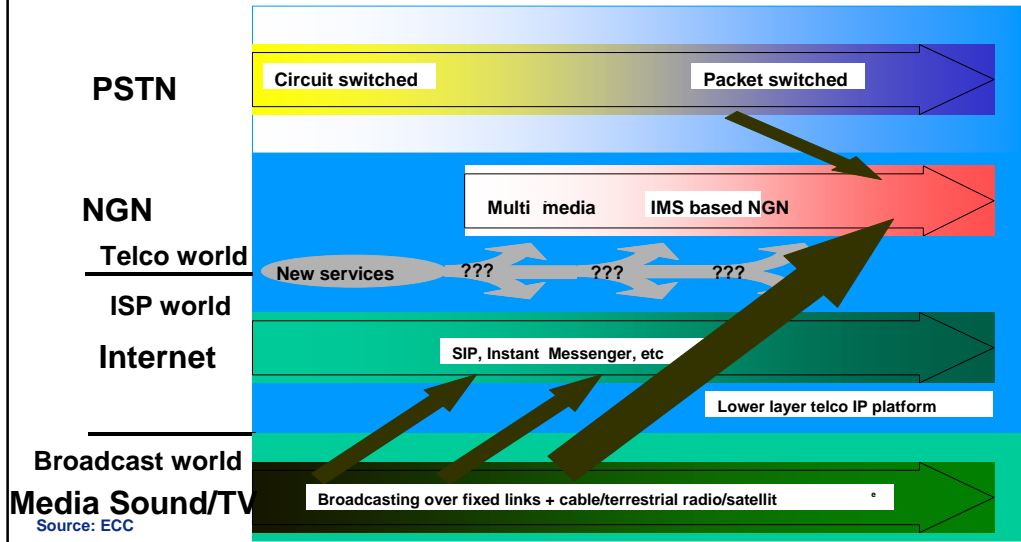
Regulatory Attitudes



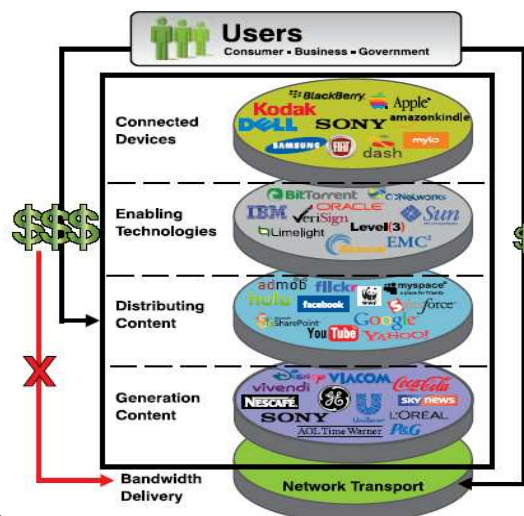
New Networks and Services require 3rd Generation Regulatory Mandate



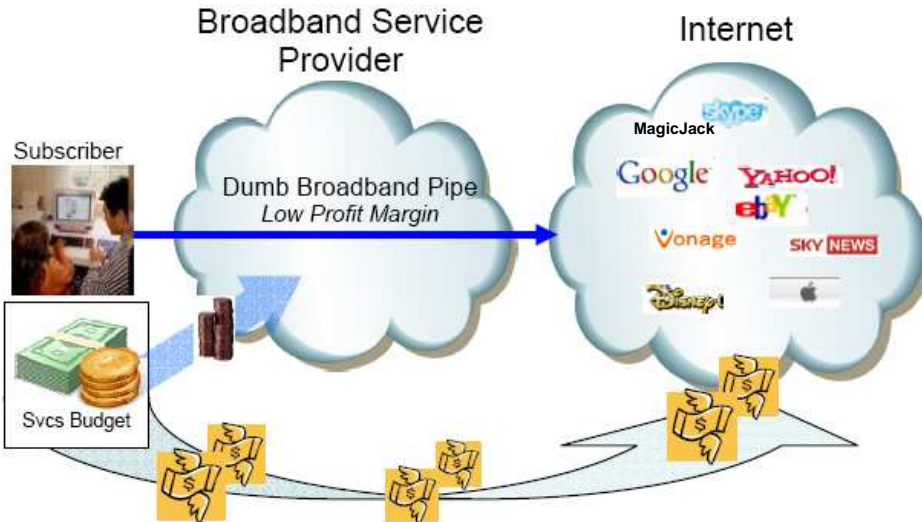
Business & Networks Changed in ICT/Media Converged Market



New Players in New Business Models need 3 G Regulation



3rd Gen Regulation needs to consider Network Design and Service Providers Agreements



Source: Free Press , 2009

3rd Gen Regulation need to assess "Net Neutrality" principles

1. Allow sending and receiving all **lawful** content
2. Allow all **lawful** applications and services
3. Allow all **lawful** devices that don't **harm** the network
4. Allow access to all **Lawful** network, application, service and content providers
5. Ensure there is no discrimination against particular **similar** lawful content, applications, services and devices
6. Reveal practices necessary network management that might limit the other five principles

Revised NN: **Red is to be defined** & **Green is added for fairness**

Varying Regulatory Approaches to NGA

	Incumbent NGA	Passive				Active	
		In-building fibre	Duct access	Dark fibre	SLU	Wave-length	BSA over NGA
BE	FTTC+VDSL2		V	V			V
DK	FTTC+VDSL2 HFC+DOCSIS 3.0		V	V	V		Cable BSA
FR	FTTH+	V	V				
DE	FTTC+VDSL2		V	V	V		
IT	FTTB (GPON) + VDSL2 FTTH green field		V	V			
ES	FTTH GPON FTTC+VDSL2	V	V	V	V		V
UK	FTTC+VDSL2 FTTH GPON		?		?		V

Source: Bocarova - 2009

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2G Regulation focuses on Competition, assuming an image of an untrusted Incumbent Monopoly

Basis of 2nd Gen Regulation

- ▶ Based on mature PSTN/ISDN which is highly “Observable” & “Controllable”.
- ▶ Copper network difficult to duplicate/substitute and physically ties up customers.
- ▶ Incumbent infrastructure sometimes thought of as being inheritance of the nation.
- ▶ Incumbent is seen as too “Fat” in Core and Access and others are sympathetically too “thin”
- ▶ Voice Fixed/Mobile is almost the only service with clear PSTN/ISDN /GSM ITU Standards,
- ▶ The value/cost of services is expressed in terms of bandwidth, distance and time.
- ▶ Free local calling with no concern for free international call termination thro the Internet.

Telecom Specific Ex-Ante Reg.

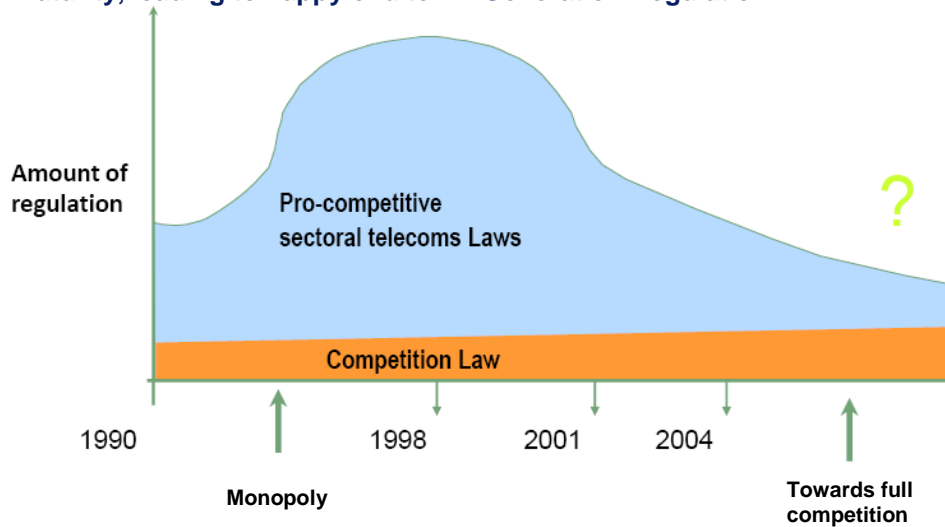
- Open Access : LLU, Bitstream, Duct /Tower Sharing, Co-location, Interconnection, ...
- Price Control: Retail Tariff filing, RIO pricing, Price Cap, quite on voice depreciation ..
- Vertical Separation: Account, Functional, Structural
- Asymmetric Regulation: Difficult on Incumbent and easier for new comers
- Lack of Internet regulations: “smuggled” services

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3rd Generation Telecom Regulation



Ex-ante Telecom Regulation is declining with market maturity, leading to happy end to 2nd Generation Regulation



Source: Centre for European Policy Studies CEPS - 2010

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3G Regulation of Broadband IP Networks and Applications with focus to promote ICT adoption and Investment in effective infrastructure



Merits of 3rd Generation Regulation

- ▶ Policies and legislations to “pull” for ICT Broadband investments and adoption :
 - a) ICT Strategic Plans for Sectors, b) Government Incentives, c) Coordination with Sectors for ICT adoption, d) Cooperation among Providers for mutual cost reduction, ...
- ▶ Defining legitimate “freedom”, “Ownership Rights”, “Public Interest”, “Customer Rights”, in view of the NGN and Internet environment.
- ▶ The Internet architecture is based on “Best Efforts” and trusted hosts, with minimal degrees of “Observability” & “Controllability”. Hence, Regulatory and Business considerations are required in the process of NGN technical standardization to ensure “fairness” and the offering of voice and other services only according to Inter-Operator Agreements.
- ▶ “Net Neutrality” principles to uphold the “Open Internet” lead to regulatory disparity and confusion among stakeholders. A balance is required between concerned stakeholders.

Fair Competition & Cooperation

- Open Access : No “Ex-Ante” with minimal “Ex-Post” equal Regulation to all Operators
- Price Control: No Retail or Wholesale Tariff filing, with necessary Ex-Post intervention
- Vertical Separation: Only Account Separation, while promoting Infrastructure competition
- Symmetric Technical & Commercial Regulations:
- Interconnection Standards, Numbering/Addressing/Naming Standards, Charging Guidelines, Regulation Pulls for Investments and ICT Adoption

Conclusions



- ▶ **The paradigm shift from PSTN to NGN and ICT Contents/Applications calls for a paradigm shift from 2G to 3G Regulation.**
- ▶ **3rd Gen Regulations need to “pull” investments in NGN, NGA and convergent new services, and focus on the support for ICT adoption and setting out regulatory principles to become more facilitator of ICT national competence.**
- ▶ **Sufficient observability & controllability need to be incorporated in standards and infrastructures with capabilities based on tools such as Deep Packet Inspection (DPI) with lawful views of fairness, privacy, copyrights, security, network integrity, and network efficiency,**
- ▶ **Summary of 10th GSR is provided in Appendix-1 to giving status Regulators current view, partly on the road and partly off the road to 3G Regulation.**
- ▶ **A proposed sample of topics of 3G regulations is depicted in Appendix-2 which includes acts that span regulatory attitudes from intrusive to self regulation.**

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Appendix-1

10th Global Symposium for Regulators (Nov. 2010) Summary of Guidelines for Enabling Open Access



- ▶ Open access can have two main forms: regulated open access (such as unbundling, especially where there is a dominant operator), and commercial open access.
- ▶ highlighting the importance of both active and passive infrastructure sharing in the deployment of electronic communications networks in property owned by any operator, private entities and public bodies, even if they are operating in other sectors.
- ▶ regulators may consider mandating dominant providers of national broadband networks, including cable landing stations, to provide open access on a fair and non-discriminatory basis to their networks and essential facilities for competitors at different levels of the networks
- ▶ publish reference offers for access to essential facilities and prices oriented to costs, as means to ensure open access.
- ▶ the regulators need to define rules that ensure shared and equal access, and prevent discriminatory behaviors and monopolization by the first infrastructure operator in such buildings.

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10th GSR (Nov. 2010) Summary of Guidelines for Enabling Open Access (continued)

- ▶ encouraging operators to set up and make available in a database accessible online, information regarding passive infrastructure (i.e., civil elements such as ducts and towers) that can be shared (including paths and space available) with the respective prices oriented to costs.
- ▶ stress the importance of defining flexible open access rules adapted to the fast-paced broadband growth.
- ▶ BB strategies should consider the role of the state in funding the national broadband infrastructure, *inter alia* through Public Private Partnerships and promoting the involvement of municipalities or cities.
- ▶ we recommend that only objectively justifiable differentiations be made in the way in which various data streams are treated, whether according to the type of content, the service, application, device or the address of the stream's origin or destination.

10th GSR (Nov. 2010) Summary of Guidelines for Enabling Open Access (continued)

- ▶ creation of preconditions for the organizational, legal and technical, standardization and interoperability aspects, so that public authorities can offer their services electronically
- ▶ Regulators may also want to ensure broadband connectivity to all schools, health centres and hospitals so that citizens may benefit when connecting through high bandwidth to these services.
- ▶ take necessary measures for data protection, privacy, consumer rights, and protection of minors and vulnerable segments of the society.
- ▶ We recommend that measures for outbound traffic monitoring be developed and eventually standardized to add a new layer of security to the existing measures deployed by stakeholders.
- ▶ Regulators may consider implementing measures to prevent ISPs from connecting unlawful user devices to the networks.
- ▶ Regulators recognize that strategies aimed at ensuring security in cyberspace has to transition from the traditional reactive stance to an incrementally proactive stance by reducing windows of vulnerability, improving reaction times, and effectively mitigating attacks. Also, we stress that preventing attacks by patching vulnerable systems, implementing firewalls or other access control technologies, monitoring through intrusion detection systems, and responding to the threats in real time, have become crucial to effective network operation

Sample of proposed 3Gen Regulations

	VoIP	NGN	NGA	Convergence
Intrusive	<ul style="list-style-type: none"> •Numbering allocation •Help public awareness of fair communications 	<ul style="list-style-type: none"> •Numbering allocation 	<ul style="list-style-type: none"> •Frequency freeing and allocations 	<ul style="list-style-type: none"> •Content monitoring with possible blocking
Ex Ante	<ul style="list-style-type: none"> •Licensing VoIP services to FBPs only and not to ISPs and not to non-FBP establishments. •Partial Net Neutrality* •Encourage DPI for regulated network management capabilities with Observeability and controllability. •Denounce International "Virtual Operators" without agreements as illegal . •QoS. •Lawful Interception. •Calling Line Ident 	<ul style="list-style-type: none"> •Partial Net Neutrality* •Encourage DPI for regulated network management capabilities with Observeability and controllability •Number Portability •QoS •Lawful Interception. •Denounce International "Virtual Operators" without agreements as illegal •Emergency Calling and CLIP 	<ul style="list-style-type: none"> •Encourage fair "Bitstream Service" on commercial basis •Ensure no access mandate on NGA investments (with exceptions in certain critical situations). •Encourage wavelength and dark fiber services. •Encourage site, duct and other infrastructure sharing services. •Encourage third party building NGA infrastructure. 	<ul style="list-style-type: none"> •Partial Net Neutrality* •Encourage DPI for regulated network management capabilities with Observeability and controllability •Denounce International "Virtual Operators" without agreements as illegal •Set up DPI rules for Privacy •Set up DPI rules for intellectual; property rights

	VoIP	NGN	NGA	Convergence
Ex Post	<ul style="list-style-type: none"> •Disallow unlawful discriminations or blockings •Stop illegal offers •Apply penalties on violations. - Resolve disputes. 	<ul style="list-style-type: none"> •Disallow unjustified discriminations or blockings •Apply penalties on violations. •Resolve disputes. 	<ul style="list-style-type: none"> •Verify wholesale NGA access prices. •Monitor and intervene to avoid any monopolistic misconducts. 	<ul style="list-style-type: none"> •Disallow unjustified discriminations or blockings •Apply penalties on violations. •Resolve disputes.
Compt. Law	<ul style="list-style-type: none"> •Yes 	<ul style="list-style-type: none"> •Yes 	<ul style="list-style-type: none"> •Yes 	<ul style="list-style-type: none"> •Yes
Self Regulat.	<ul style="list-style-type: none"> •Interconnection and services agreements •Regulator, Operators, and citizens agree on technical and commercial DPI rules 	<ul style="list-style-type: none"> •Interconnection and services agreements •Operators agree on technical and commercial DPI rules •Communities involvement in social and legal DPI rules 	<ul style="list-style-type: none"> •Agreements of NGA access and infrastructure sharing on commercial basis 	<ul style="list-style-type: none"> •Agreements on commercial basis. •Operators agree on technical and commercial DPI rules •Communities involvement in social and legal DPI rules

THANK YOU

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