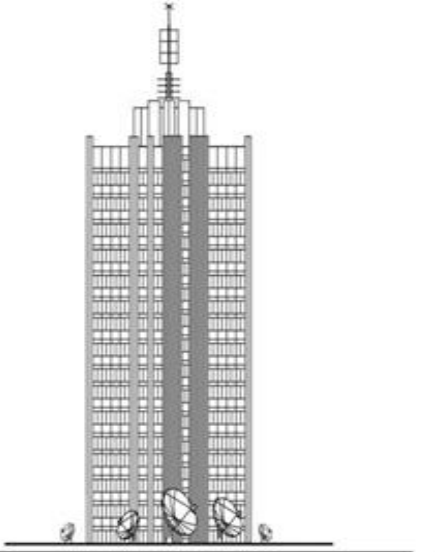




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ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ УНИТАРНОЕ ПРЕДПРИЯТИЕ
НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ РАДИО



Российская Академия Наук

Институт социально-политических исследований РАН

The importance of the development and adoption of socio-technical standards for developing countries

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- The value of ICT in the modern world, the digital economy
- The objectives of sustainable development,
- Paradox of the Information Society (IS).
- Identified problems and proposed solutions: Socio-economic awareness, High-level indicators, Involving developing countries in the standardization process .
- Formulate the problem.
- Social-technical standard (STS).
- Definition of STS.
- Determine of STS.
- Variants of algorithm of STS construction.
- Connection between STS and ITU –T recommendations and other ITU documents.

The value of ICT in the modern world, the digital economy

It is recognized that the development and implementation of new ICTs is one of the effective tools for achieving sustainable development and formation of digital economy.

 SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY




6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS




SUSTAINABLE DEVELOPMENT GOALS

Paradox of the Information Society (IS)

ITU's annual reports from year to year record the growth of ICT development indicators in all developed and developing countries of the world. Developing and implementing all new ICTs, mainly at the expense of the state-owned company of the IT industry, it is very plausible to convince the public that another round of ICT development leads to an increase in the living standards of the population.

Paradox of the Information Society (IS)

- **Sociological and statistical measures, despite the growth of ICT indicators, record a steady growth of macroeconomic and macro-social disparities between countries and within countries, with an increase in the number of socially unprotected strata of the population on the planet.**
- **This phenomenon we called the paradox of the information society.**

Paradox of the Information Society (IS)

The paradox of the development of the information society, noted, creates, supports and multiplies the hotbeds of social tension on the planet. The quantitative increase in the socially unprotected strata of the population is associated not only with the deterioration of their material prosperity, but also with a marked decrease in their social capital, the lack of a prospect of getting on inefficiently operating social elevators.

Paradox of the Information Society (IS)

The main reason for the emergence and existence of this paradox over a long period of time is that there is no clear correlation between the indicators of ICT development and social development indicators.

Paradox of the Information Society (IS).



Indicators of living standards (high-level indicators)

- Education indicators
- Health indicators average
- Average *life expectancy*
- Quality of social security
- GDP per capita, etc.



The relationship between the indicators is poorly understood



Indicators of ICT development

- Number of computers
- Number of telephone lines
- Share of households with Internet access
- Skills in the field of ICT
- Number of broadband subscribers, etc.

Paradox of the Information Society (IS).

- ICT Development Index.
- ICT Price Basket.
- ICT Core Indicators.
- Measuring the WSIS Targets - A statistical framework.
- Methodological Manual for Statistics on the Information Society, 2012. (Eurostat).
- Benchmarking Digital Europe 2011-2015, a conceptual framework (European Commission) *and other.*

Identified problems and proposed solutions

The key place implementation networks of the 5G and beyond (FN) requires all countries to attract huge material and labor costs. Therefore, ITU recommends that a study of such fundamental issues that had previously received insufficient attention in the development of existing networks was recommended. Among such goals, important for future networks (FN) (ITU-T Recommendations occupied by **"awareness of social and economic problems"**). In addition, Recommendation ITU-T Y3001 points to the need, at the standardization stage, to determine how far the new recommendations correspond to those **"high-level capabilities and characteristics"** that are recommended for future networks (FN)." The term "high-level capabilities" is usually understood as social standards related to the standard of living.

Identified problems and proposed solutions

Two recommendations ITU-T Y.3013 (Socio-economic assessment of future networks by tussle analysis) and ITU-T Y.3035 (Service universalization in future networks) are known, where the issue of social-economic awareness is suggested to be solved using the tussle analysis method and by determining which technical considerations should be useful for increasing the universality of services and how they can contribute to the achievement of the goal.



Best indicators of ICT development



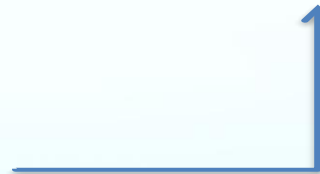
Required monitoring system



Real monitoring system

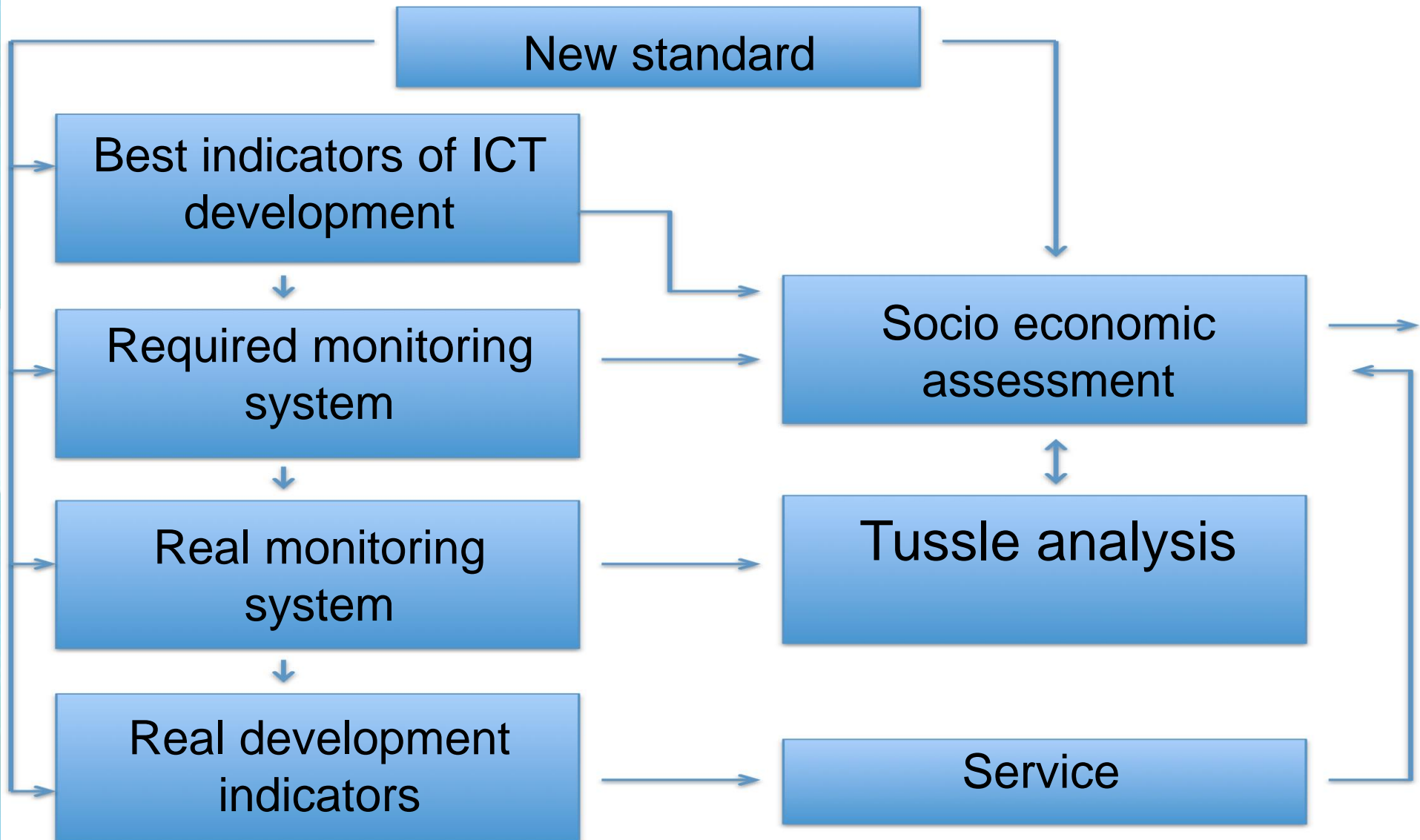


Real development indicators



Comparison of development indicators

Identified problems and proposed solutions



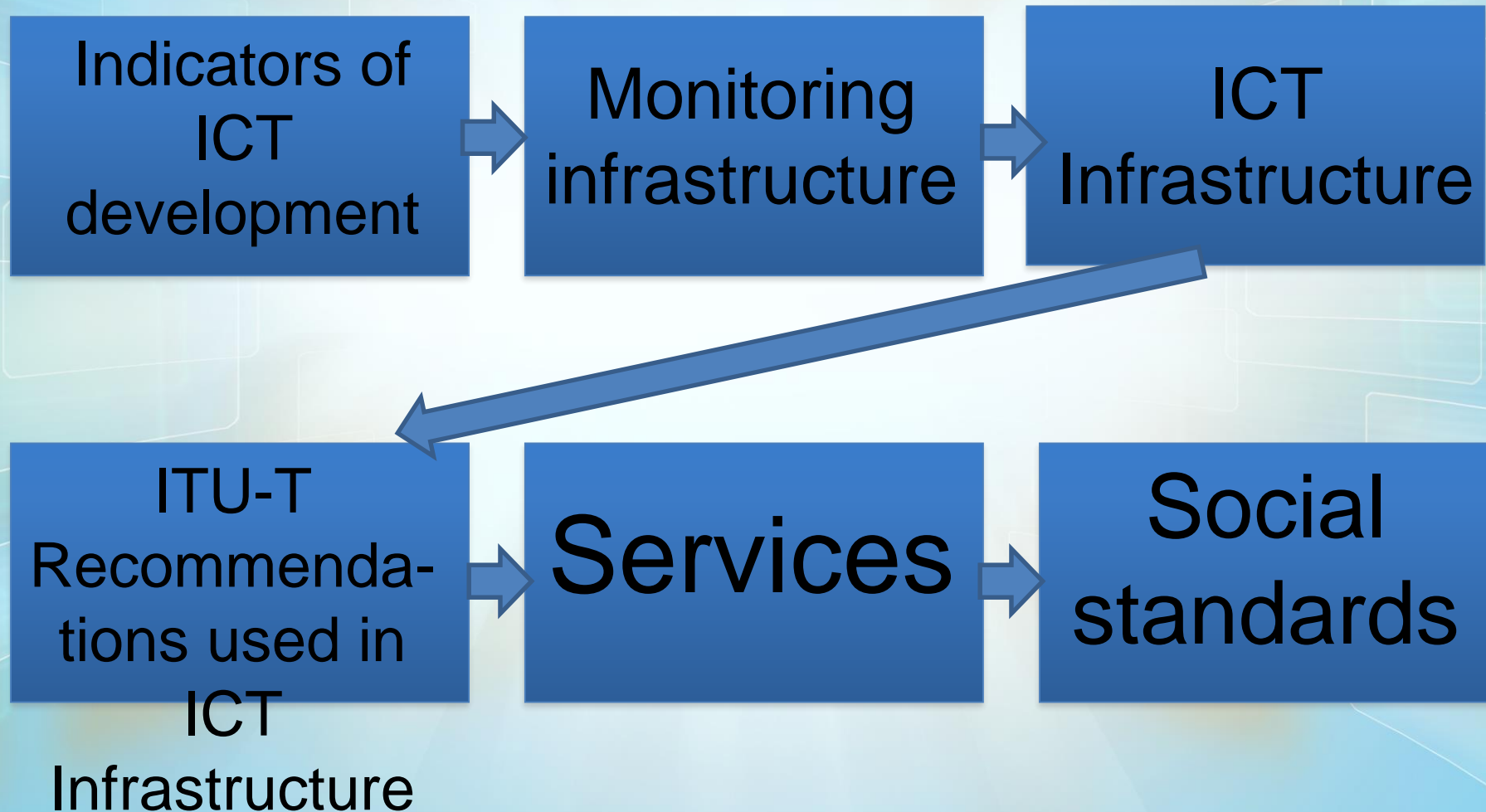
Identified problems and proposed solutions

However, the solutions proposed in these recommendations do not take into account the specifics of developing countries and cannot solve the problem of observing the high-level capabilities and characteristics in the absence a clear relationship between indicators of ICT development and social standards (living standards).

Identified problems and proposed solutions

However, its achievement is complicated by objective circumstances. The reason for this phenomenon can be explained by the misbalance between the social and economic situation of developing countries (available material and human resources, social and economic tasks relevant to these countries), and by the potential of ICT (new ITU-T Recommendations) that are oriented and aimed, mainly, at the resolution of tasks for developed countries. One of the tools of the movement towards goals should be the socio-technical standard for managing safe living and sustainable development of society through the integrative function of ICTs and socially-oriented digital economy. The spontaneous development of ICTs and digital economy in aggregated conflicting social effects and dysfunctions has led to the growth of social disparities and caused an urgent need for creation a scientifically-based modern democratic system of state-civil management aimed at strengthening social solidarity and harmonizing social relations.

Identified problems and proposed solutions



Proposed solution: Indicators of ICT services



Indicators of the living standard

- Education indicators
- Education indicators
- Average life expectancy
- Quality of social security
- GDP per capita, etc



Indicators of Infocommunication services

- Indicators of state services
- Indicators of educational services
- Indicators of medical services
- Indicators of communication services
- Indicators of security services ,etc.



Indicators of ICT development

- Number of computers
- Number of telephone lines
- Share of households with Internet access
- Skills in the field of ICT
- Number of broadband subscribers, etc.

Social-technical standard (STS)

Recommendation STS introduces the concept of STS usage. It is advisable that it would be the developing countries that would develop the STS. To develop the STS, it is necessary to formulate actual social problems that are relevant to a particular developing country, problems that require resolution. Further, it is necessary to analyze the capacity of new ICT by comparing the material and human resources necessary for their implementation and the presence of available or potential resources in this developing country to solve these problems

Definition of STS



The STS is a new combined standard that links the "ITU-T Recommendations (technical standards) governing the functioning and interaction of telecommunication networks and social standards that are based on the directive set of measures for consuming the relevant social goods and services at least the minimum allowable size. These standards solve several tasks that are urgent for ITU:

- social and economic awareness,
- identification of high-level indicators,
- involving developing countries in the standardization process, as it provides an effective tool for planning the social and economic development of this state in conjunction with the introduction of new ICT standards in conjunction with the social tasks being addressed.

The availability of such STS is useful for developers and equipment manufacturers, as it allows determining the social and technical needs of developing countries in new equipment and the terms of cost recovery.

Determine of STS

1. The existence of social standards.
2. Measure the ICT Development Index, (the list is determined by the International Telecommunication Union) using an existing monitoring system. The obtained indicator of ICT development is determined by the state of the information and communication environment (ICS) of the country.
3. By means of an expert assessment of the impact of ICT services on the social standard (on the standard of living services and standard of living (social standard indicators))
4. A correlation is established between the indicators of ICT development and indicators social development. In the corresponding column, the recommendations on the implementation of these services are recorded, which give the obtained indicators.

Variants of algorithm of STS construction

Two algorithms for determining the STS are proposed.

The first of can be described as a following sequence:

- step 1 - monitoring of real ICS development indicators (the list of measurable indicators is determined by ITU documents);**
- step 2 – The relationship between the services provided and the infrastructure of the ICS and the recommendations used in it for this purpose is established and fixed.**
- step 3 - establishes the conformity (expert way) between services and social standards, while emphasizing the ability of ICTs to reduce the costs of services that are included with the social standard.**

Variants of algorithm of STS construction

This analysis takes into account the consumption of limited resources. This ITS can be considered as the reference (zero) for a given country.

Given the similarity of the social development of countries (including the developing ones), several categories of such standards can be singled out. The existence of such a line of standards creates a clear perspective for the direction of ICT development in this country.

Variants of algorithm of STS construction

A second algorithm may be proposed.

In this case, it is proposed to develop the maximum possible list of socially significant services using ICT, for example, for emergency prevention services, alerting and managing the rescue of the population in the event of emergencies. This will be a socio-technical standard for emergency situations, which will specify the technical standards, which will be used at the same time and socio-economic indicators for the implementation of such a standard. Such STS may contain tasks that are highly desirable, but not yet implemented. And in the category of unrealized services there will be a dash, meaning that there is no recommendation that can implement it. Thus, such a STS can be a guide for any country.

Thus, the development of the STS under any algorithm realizes the target task of obtaining a "social-economic assessment", defined in the rivers. ITU Y.3001

Connection between STS and ITU –T recommendations and other ITU documents

A proposed STS status and its relationship with ITU-T Recommendations; developed socio-technical standards, will help:

- ITU management determine the degree of demand for the recommendations made,
- Developers and manufacturers in the choice of directions for promising research,
- specialists of developing countries take an active part in the standardization process in ITU

Examples of STS development and its usage in developing countries.

As a proposal - to propose the introduction of a special topic in the already approved recommendations: in which of the STS standards this recommendation is involved. it is natural that in STS it is possible and necessary to enter the technical standards developed by other international and national standards bodies.

A similar heading should be entered with the deposit format, where it will be indicated that this contribution, for example, improves the parameters of such STS.

The STS can be replaced in some way by a procedure such as liaison, which is so often used in the practice of considering contributions in all ITU-T contribution.

The main activities within the project

At present, much attention is paid to building a digital economy. It is enough to look at the plans of the planned events in the next two slides (*the data given on these slides are taken from official sources by the Ministry of Communications and Mass Media of the Russian Federation*).

Technologies of digital economy in strategic documents of Russia

- The concept of long-term socio-economic development of the Russian Federation for the period until 2020
- Forecast of the long-term socio-economic development of the Russian Federation for the period up to 2030
- The forecast of social and economic development of the Russian Federation for 2016 and for the planned period 2017 and 2018
- Forecast of scientific and technological development until 2030
- Strategy of scientific and technological development
- Strategy for the development of the information technology industry in the Russian Federation for 2014-2020 and for the future up to 2025
- The State Program of the Russian Federation "Information Society (2011-2020)"
- Action plan (road map) "Development of the Information Technology Industry"
- The concept of regional informatization
- Action plan (road map) in the field of "engineering and industrial design"
- Plan of measures ("road map") for the creation of a single federal interdepartmental accounting system for students on basic educational programs and additional educational programs "

Technologies of digital economy in strategic documents of Russia

- Action plan (road map) "Increasing the availability of energy infrastructure"
- "Road maps" of the National Technological Initiative - "Helsnet", "Neuronet", "Aeronet", "Aeronet" and "Marinet"
- Plan of measures ("road map") "Development of laser, optical and optoelectronic technologies (photonics)"
- Action plan (road map) on the development of electronic interaction in the financial market
- Plan of measures ("road map") to improve the efficiency of spending on the development of public roads
- National Security Strategy
- Strategy of counteraction to extremism in the Russian Federation till 2025
- The concept of public safety
- The fundamentals of the state policy in the field of ensuring the security of the population of the Russian Federation and the protection of critically important and potentially dangerous objects from threats of natural, man-made character and terrorist acts for the period up to 2020

Conclusion

- However, we believe that the issue of revealing a clear correlation between the characteristics of new ICTs and indicators of the standard of living, that is, the impact of ICT on social standards, remains open. The impact of the paradox of the information society is still palpable.
- The proposed concept of developing social and technical standards will link ICT development indicators with social standard indicators, which will dramatically increase the effectiveness of implemented ICTs and accelerate the movement of all countries towards sustainable development goals. Of course, we understand that this is only the beginning of the road.

Conclusion

- Speaking with representatives of developing countries, we believe that they, as the most interested party, since the consequences of the paradox of the information society, as was shown above, are most palpable in these countries, will pioneer the development of such standards.
- We believe that socio-technical standards can become working tools not only for scientists and specialists in the field of ICT, sociology and economics, but also for government officials, regulators of the ICT economy and business representatives.



Thank you for attention.

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