

Взамен ГОСТ 24.601-86, ГОСТ 24.602-86. Введ. 29.12.1990. Государственный комитет СССР по управлению качеством продукции и стандартам. М.:Изд-во стандартов, 1992. – 19 с.

2. ГОСТ Р ИСО МЭК ТО 10032-2007: Эталонная модель управления данными (идентичен ISO/IEC TR 10032:2003 Information technology — Reference model of data management)

3. Государственная программа о развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2008 - 2012 годы. Утверждена Постановлением Правительства Российской Федерации от 14 июля 2007 г. № 446.

4. Изменения и дополнения в Устав федерального государственного учреждения «Специализированный центр учета в агропромышленном комплексе», утвержденный приказом Министерства сельского хозяйства Российской Федерации от 19 сентября 2006 г. № 401-у. Утверждены приказом Минсельхоза России от от 5 февраля 2009 г. № 4-у

5. Концепция функционирования системы информации о рынке АПК России в 2003 году и последующие годы. [Электронный ресурс]. -Режим доступа: <http://www.mcx.ru/documents/document/show/7143.191.htm>

УДК 311

## THE USE OF COMPOSITE STATISTICAL INDICES TO ASSESS THE DEVELOPMENT OF INFORMATION TECHNOLOGY

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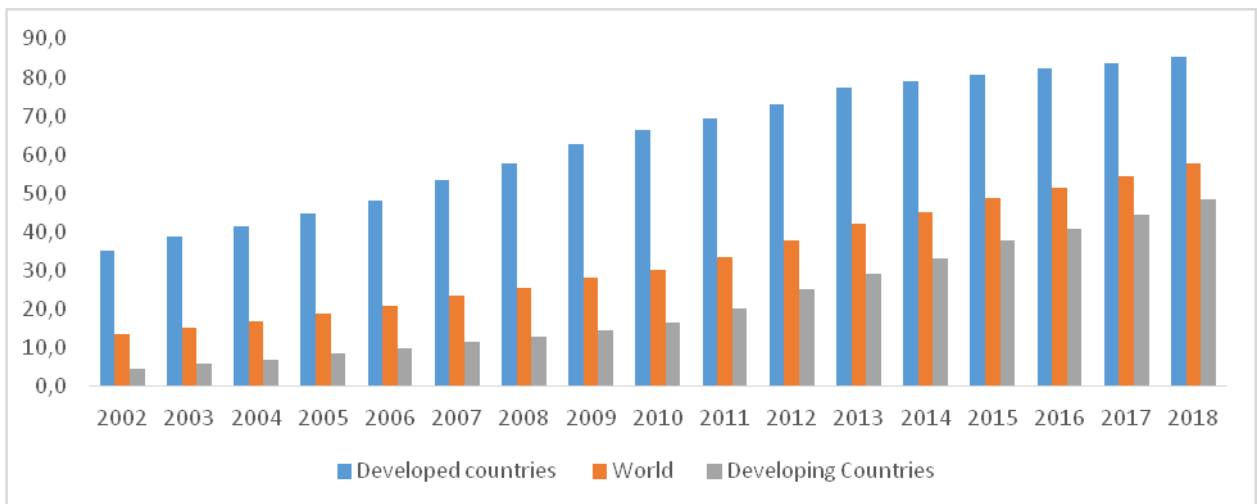
***Аннотация:** Рассмотрено использование композиционных статистических показателей для оценки развития информационных технологий*

***Ключевые слова:** статистические показатели, информационные технологии*

In the light of the rapid development of IT around the world, a mechanism to assess their proliferation and development has become a necessity. In view of this, scientists have developed the IDI (ICT Development Index), which will be discussed in this paper. The purpose of the study is to apply IDI to evaluate the expansion and growth of IT in the world, including in the Russian Federation. The goals of the study are (1) to compare the country ratings for 2007 and 2017, (2) to determine the position of the Russian Federation in this rating.

The International Telecommunication Union (ITU) is the organization that keeps statistics on the state of development of information technology around the world. ITU is a specialized division of the United Nations Organization which oversees information and communications technologies (ICT).

According to ITU, at the end of 2018, 51.2% of the total population of the world, or 3.9 billion people, were using the Internet. Figure 1 demonstrates the dynamics of the growth in the number of households with access to the Global Network for developing and developed countries.



Between 2002 to 2018, the average number of households connected to the Internet in the world increased by 4.3 times; in developed countries, it increased by 2.4 times; in developing - by more than 10 times. By 2030, the number of Internet users is expected to reach 80% of the world's households, i.e. about 6 billion people will have Internet access.

The ICT Development Index (IDI), which has been published annually since 2009, is a composite index that until 2017, combined 11 indicators into one benchmark measure. It is used to monitor and compare developments in information and communication technology (ICT) between countries and over time.

The main objectives of the IDI are to measure:

- the level and evolution over time of ICT developments within countries and the experience of those countries relative to others;
- progress in ICT development in both developed and developing countries;
- the digital divide, i.e. differences between countries in terms of their levels of ICT development; and the development potential of ICTs and the extent to which countries can make use of them to enhance growth and development in the context of available capabilities and skills.

The Index is designed to be global and reflect changes taking place in countries at different levels of ICT development. It therefore relies on a limited set of data which can be established with reasonable confidence in countries at all levels of development.

Recognizing that ICTs can be development enablers is central to the IDI's conceptual framework. The ICT development process, and a country's evolution

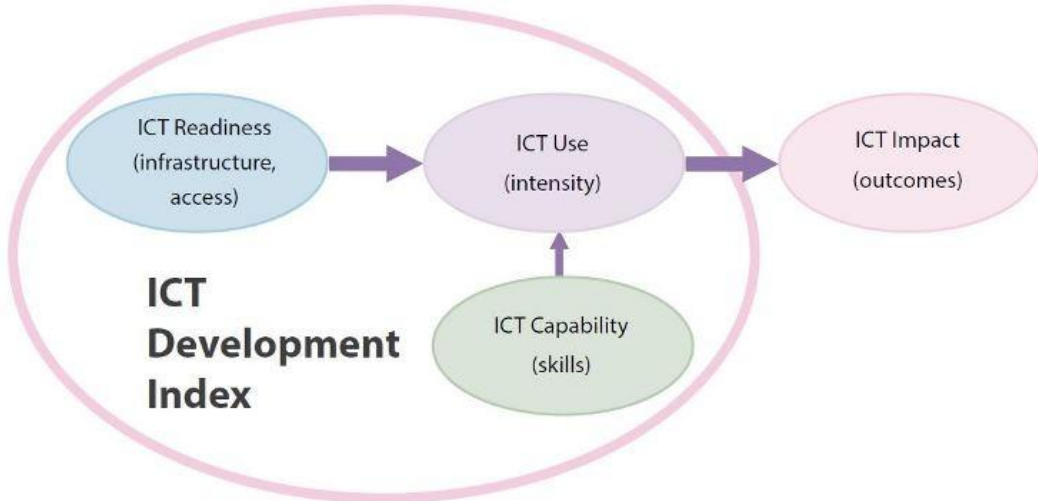
towards becoming an information society, can be depicted using the three-stage model illustrated in Figure 2:

Stage 1: ICT readiness – reflecting the level of networked infrastructure and access to ICTs;

Stage 2: ICT intensity – reflecting the level of use of ICTs in the society; and

Stage 3: ICT impact – reflecting the results/outcomes of more efficient and effective ICT use.

Figure 2: Three stages in the evolution towards an information society



Source: ITU.

Based on this conceptual framework, the IDI is divided into the following three sub-indices, and a total of 11 indicators (Figure 3).

ICT access	Reference value	(%)
1. Fixed-telephone subscriptions per 100 inhabitants	60	20
2. Mobile-cellular telephone subscriptions per 100 inhabitants	120	20
3. International Internet bandwidth (bit/s) per internet user	2'158'212*	20
4. Percentage of households with a computer	100	20
5. Percentage of households with Internet access	100	20
ICT use	Reference value	(%)
6. Percentage of individuals using the Internet	100	33
7. Fixed-broadband subscriptions per 100 inhabitants	60	33
8. Active mobile-broadband subscriptions per 100 inhabitants	100	33
ICT skills	Reference value	(%)
9. Mean years of schooling	15	33
10. Secondary gross enrolment ratio	100	33
11. Tertiary gross enrolment ratio	100	33

**Access sub-index:** This sub-index captures ICT readiness, and includes five infrastructure and access indicators (fixed-telephone subscriptions, mobile-cellular telephone subscriptions, international Internet bandwidth per Internet user, households with a computer, and households with Internet access).

Use sub-index: This sub-index captures ICT intensity, and includes three intensity and usage indicators (individuals using the Internet, fixed broadband subscriptions, and mobile-broadband subscriptions).

Skills sub-index: This sub-index seeks to capture capabilities or skills which are important for ICTs. It includes three proxy indicators (mean years of schooling, gross secondary enrolment, and gross tertiary enrolment). As these are proxy indicators, rather than indicators directly measuring ICT-related skills, the skills sub-index is given less weight in the computation of the IDI than the other two sub-indices.

In accordance with this index, the position of the Russian Federation in the country rating is determined.

The rating of countries based on the ICT Development Index is presented in Table.

*Таблица*

2007			2017		
IDI Rank	Economy	IDI Value	IDI Rank	Economy	IDI Value
1	Sweden	7,50	1	Iceland	8,98
2	Korea	7,26	2	Korea (Rep.)	8,85
3	Denmark	7,22	3	Switzerland	8,74
4	Netherlands	7,14	4	Denmark	8,71
5	Iceland	7,14	5	United Kingdom	8,65
6	Norway	7,09	6	Hong Kong, China	8,61
7	Luxembourg	7,03	7	Netherlands	8,49
8	Switzerland	6,94	8	Norway	8,47
9	Finland	6,79	9	Luxembourg	8,47
10	United Kingdom	6,78	10	Japan	8,43
11	Hong Kong, China	6,73	11	Sweden	8,41
12	Japan	6,64	12	Germany	8,39
13	Germany	6,61	13	New Zealand	8,33
14	Australia	6,58	14	Australia	8,24
15	Singapore	6,57	15	France	8,24
16	New Zealand	6,44	16	United States	8,18
17	United States	6,44	17	Estonia	8,14
18	Ireland	6,37	18	Singapore	8,05
19	Canada	6,34	19	Monaco	8,05
20	Austria	6,32	20	Ireland	8,02
...	...	...	...	...	...
50	Russian Federation	3,83	45	Russian Federation	7,07

In 2007, Russia occupied the 50th place, occupying the position in the rating between Uruguay (49th place) and Ukraine (51th place). In 2017, Russia climbed several positions and reached the 45th place in this rating, and consequently landed between Portugal and Slovakia.

In 2017, the Strategy of the Information Society Development in the Russian Federation for 2017 - 2030 was adopted. The implementation of this strategy will

allow Russia to develop dynamically in the field of information technology and advance to a higher place in the aforementioned rating.

### **Библиографический список**

1. ГОСТ 34.601-90 Информационная технология. Комплекс стандартов на автоматизированные системы. Автоматизированные системы. Стадии создания. Взамен ГОСТ 24.601-86, ГОСТ 24.602-86. Введ. 29.12.1990. Государственный комитет СССР по управлению качеством продукции и стандартам. М.:Изд-во стандартов, 1992. – 19 с.

2. ГОСТ Р ИСО МЭК ТО 10032-2007: Эталонная модель управления данными (идентичен ISO/IEC TR 10032:2003 Information technology — Reference model of data management)

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## **ПОКАЗАТЕЛИ ОЦЕНКИ ЭКОНОМИКО-РЕСУРСНОГО ПОТЕНЦИАЛА ФОРМИРОВАНИЯ АГРАРНЫХ КЛАСТЕРОВ**

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**Аннотация:** Аграрный кластер является передовым типом аграрной индустриализации. Сам процесс кластеризации имеет большое значение в стимулировании роста региональной экономики, повышении конкурентоспособности сельских территорий, продвижении специализации сельскохозяйственного производства и увеличении доходов фермеров.

**Ключевые слова:** кластеры, экономический потенциал, природно-ресурсный потенциал.

Наиболее важным шагом в комплексном анализе кластеров является потенциальный анализ. Под потенциалом региона понимается совокупность всех ресурсов (резервов, источников) в пределах его границ - материальных и духовных, природных и человеческих, как уже вовлеченных в процессы общественного производства и общественного развития, так и тех, которые могут быть использованы для экономического роста, установление общественно-политической стабильности, повышение уровня и качества жизни населения территории. Потенциал следует рассматривать как категорию, характеризующую потенциальные запасы и возможности развития региона, величина которой со временем меняется. Рассмотрим следующие виды