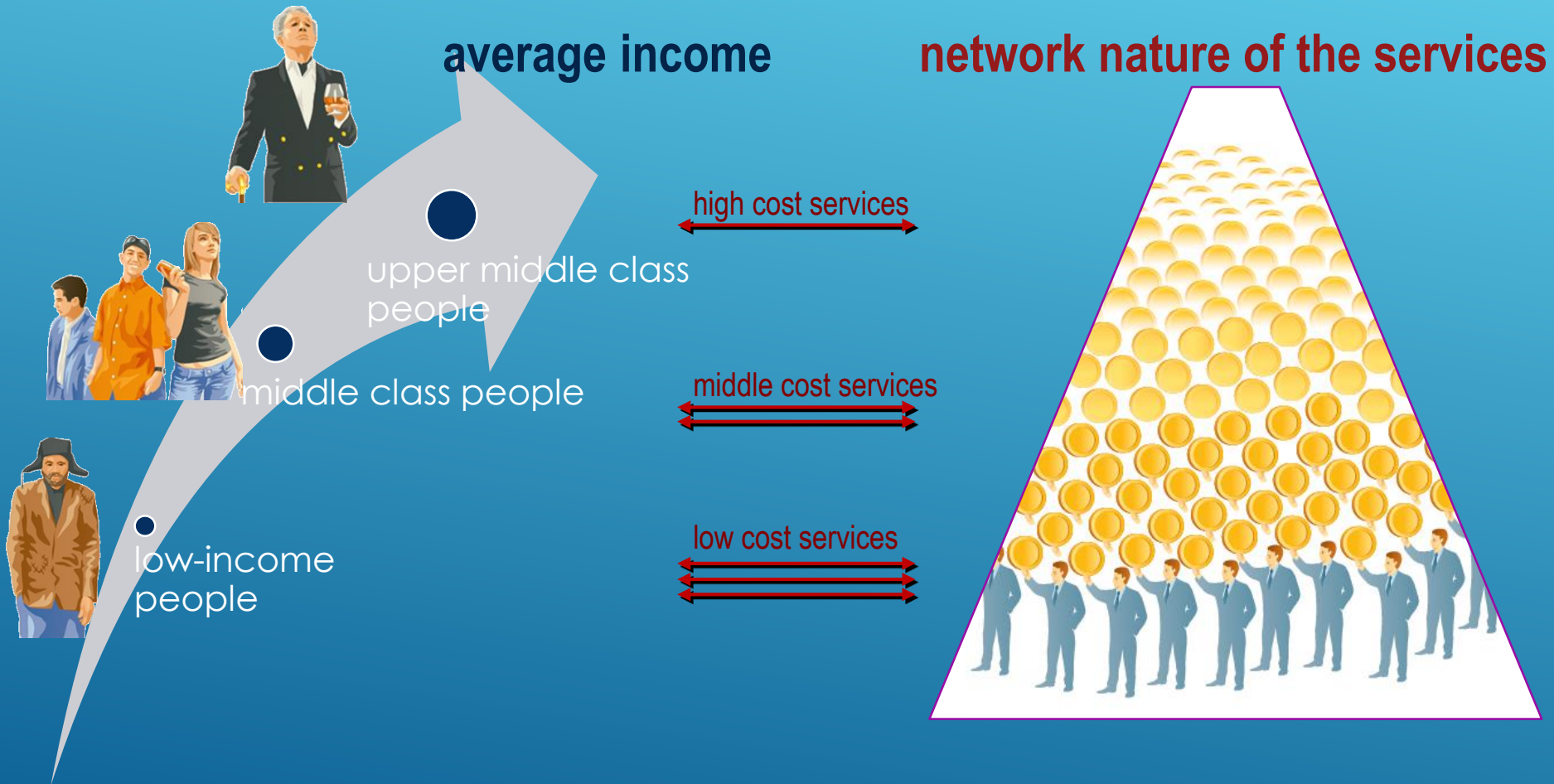


Course title: Innovation in FinTech

Lecture: The Future of Payment Technologies

**Lecturer Radjabov
Jamsher**

COMPANIES PROVIDE SERVICES TO ALL SEGMENTS OF THE POPULATION

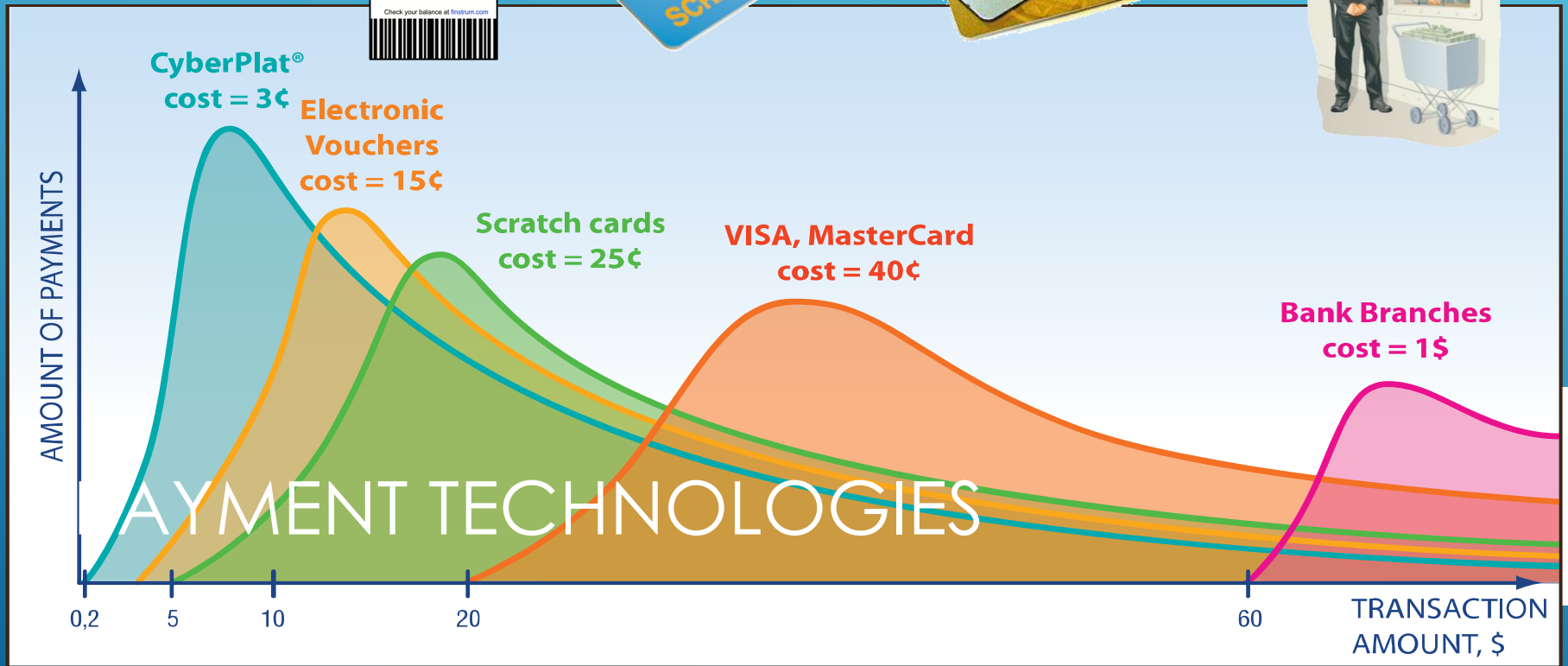
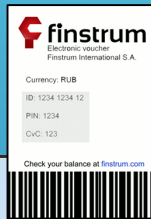


THE AVERAGE AMOUNT OF THE PAYMENT

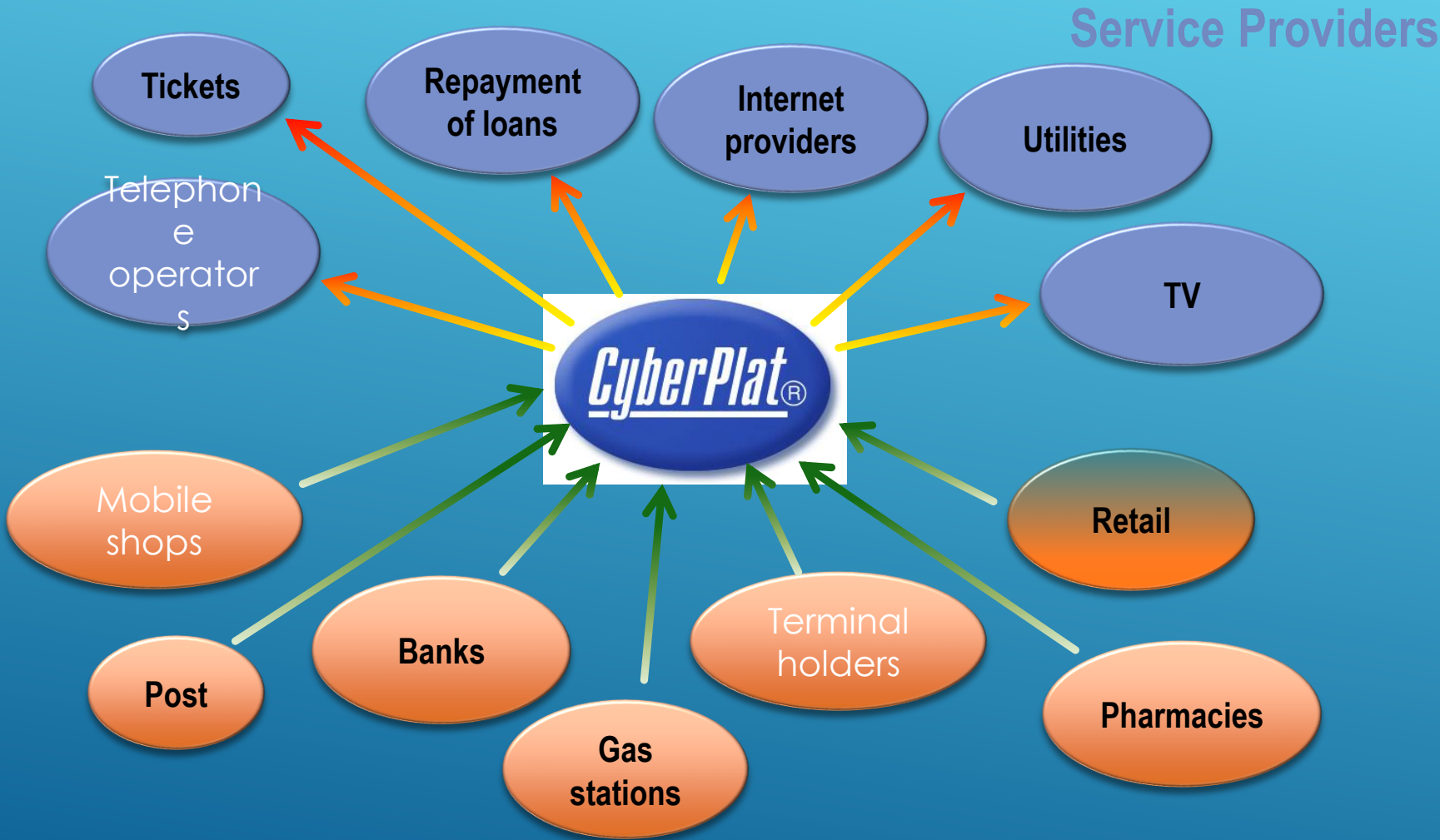
Country	ARPU
Russia	\$4
Russia (Moscow)	\$10
Russia (Regions)	\$3
Ukraine	\$2,5
India	\$1,1
Central Asia	\$1



A new economy needs a less costly financial infrastructure to collect micropayments



ORGANIZATIONAL SCHEME OF PAYMENT



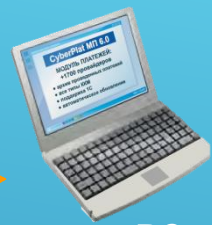
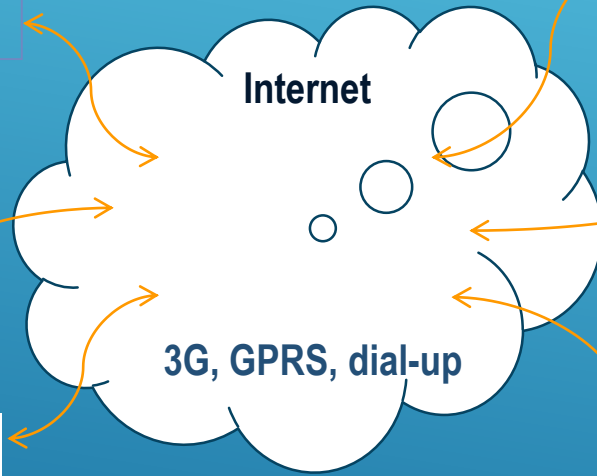
THE MAIN COMPONENTS OF EFFICIENCY

- Automation of all processes from receiving payments to financial clearing between partners;
- Low cost of first connection for a new partner to CyberPlat;
- Lower support costs of participation in the reception of payments using CyberPlat;
- Providing for partners turnkey solutions and software components;
- A large number of supported hardware: payment terminals, cash, POS, ATMs;
- The high speed and reliability transaction`s processing;
- Using electronic documents with partners.



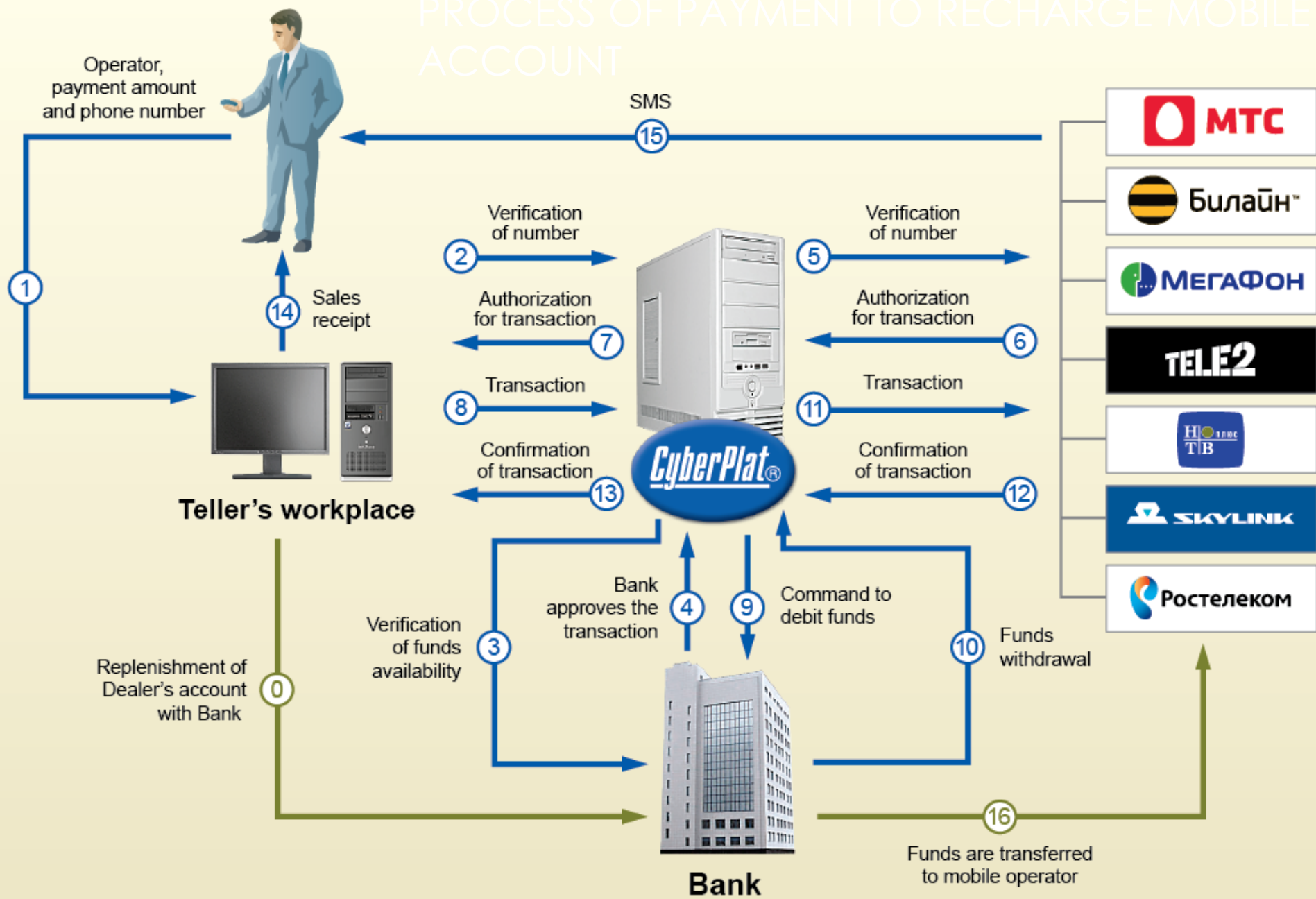


open API



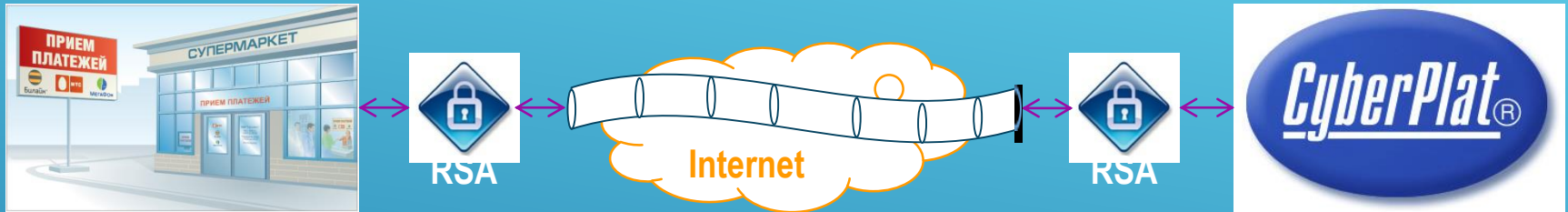
SUPPORT HARDWARE AND TECHNOLOGIES

PROCESS OF PAYMENT TO RECHARGE MOBILE ACCOUNT

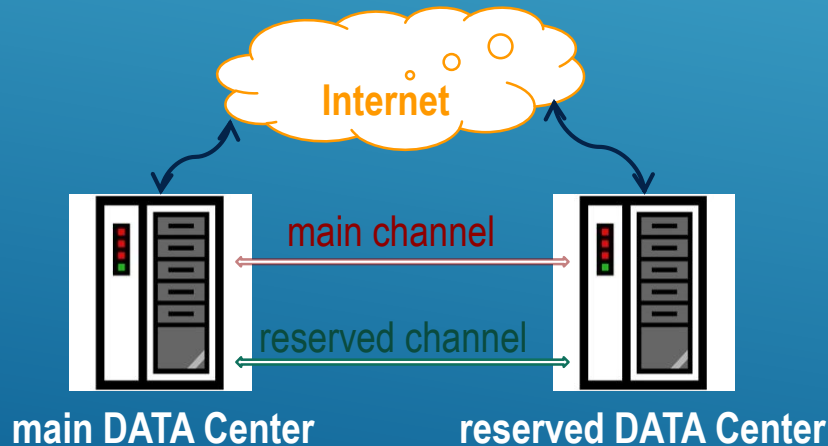


Reliability and safety

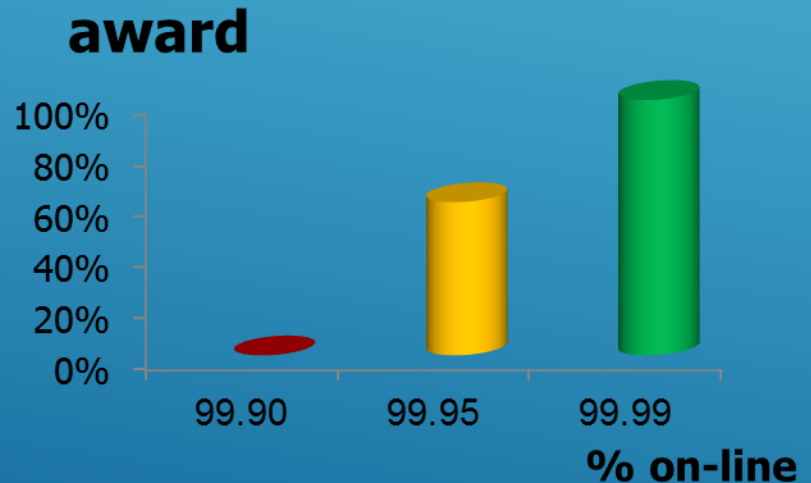
➤ Information Security:



➤ Reliability of the technical platform:



➤ Financial liability of IT-staff:





Subscriber

Registration



Payment Book

Payments



Telephone operators



Repayment of loans



TV



Internet providers



Tickets



Utilities

Service Providers

- Save payment pattern;
- Auto payments;
- Payments from linked credit card or mobile;
- Save the change on balance Payment Book.

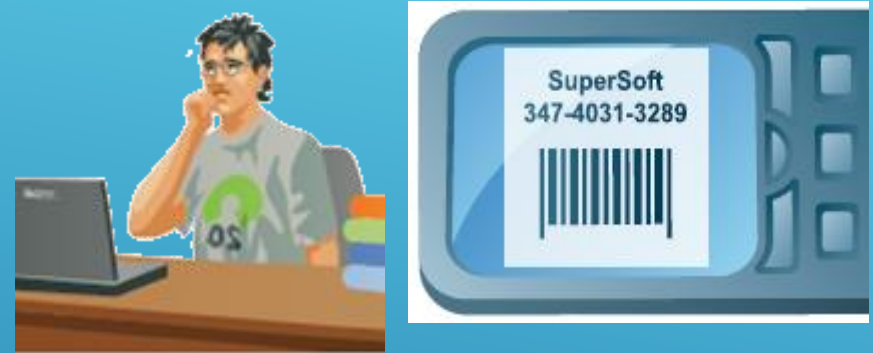
PAYMENT BOOK

Service is efficient even for payments less than \$1

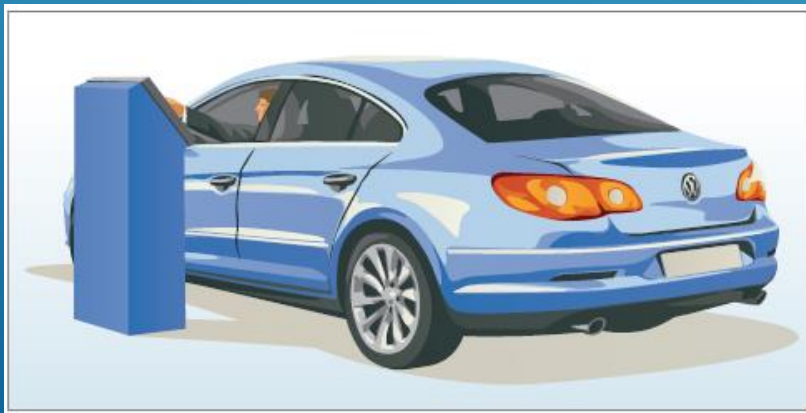
➤ Transfer the change on phone



➤ SaaS micro payment



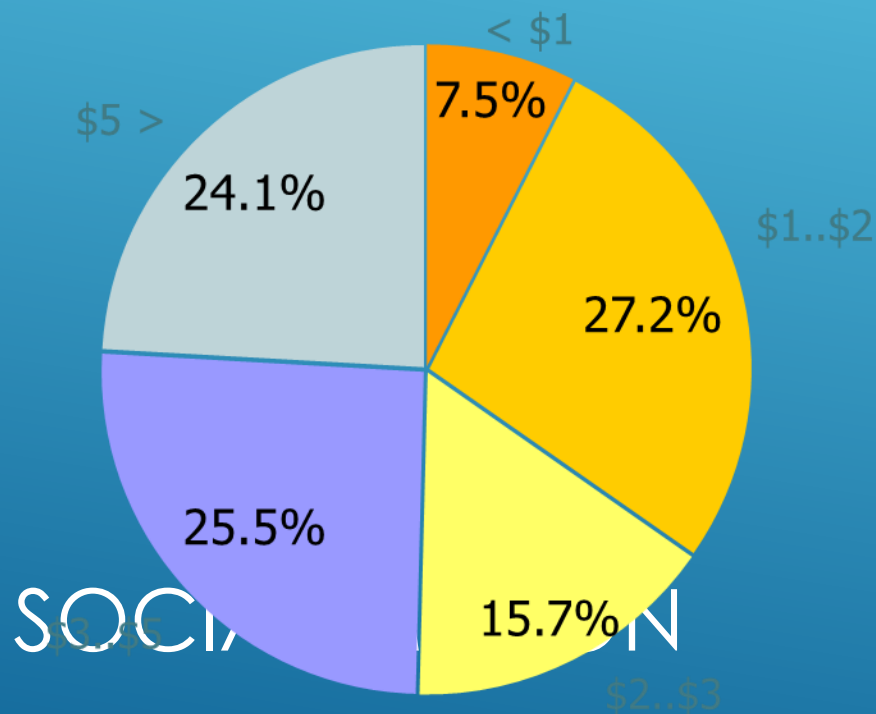
➤ Parking pay



➤ Insurance policy as a check



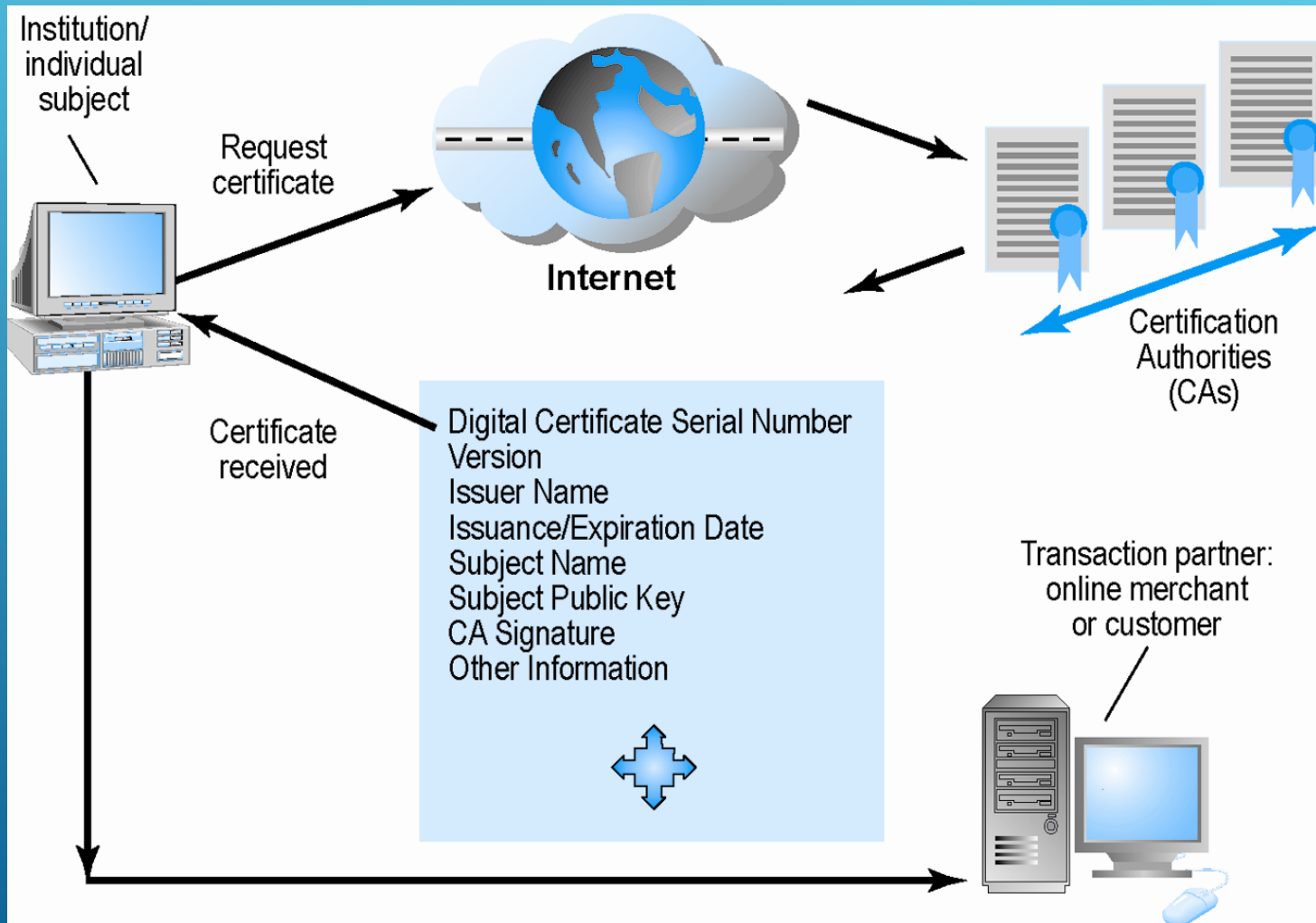
Payment`s distribution in Russia



- **Bridging the Digital Divide**
- **More then 50% payments in the system of CyberPlat do not exceed \$3**



DIGITAL CERTIFICATES AND CERTIFICATION AUTHORITIES



LIMITS TO ENCRYPTION SOLUTIONS

- ▶ Doesn't protect storage of private key
 - ▶ PKI not effective against insiders, employees
 - ▶ Protection of private keys by individuals may be haphazard
- ▶ No guarantee that verifying computer of merchant is secure
- ▶ CAs are unregulated, self-selecting organizations

INSIGHT ON SOCIETY

IN PURSUIT OF E-MAIL SECURITY

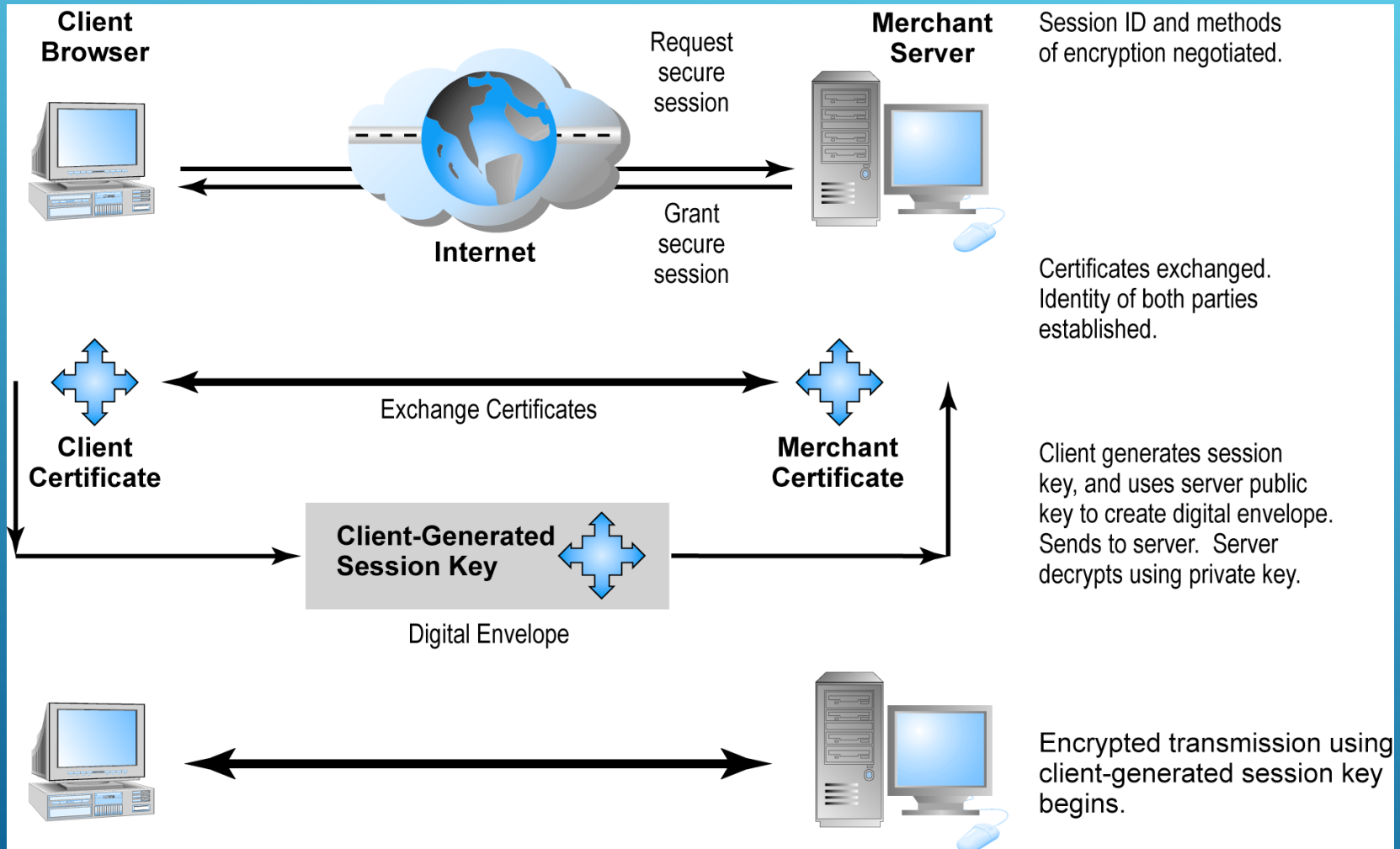
CLASS DISCUSSION

- ▶ What are some of the current risks and problems with using e-mail?
- ▶ What are some of the technology solutions that have been developed?
- ▶ Are these solutions compatible with modern law?
- ▶ Consider the benefits of a thorough business record retention policy. Do you agree that these benefits are worth giving up some control of your e-mail?

SECURING CHANNELS OF COMMUNICATION

- ▶ **Secure Sockets Layer (SSL):**
 - ▶ Establishes a secure, negotiated client-server session in which URL of requested document, along with contents, is encrypted
- ▶ **S-HTTP:**
 - ▶ Provides a secure message-oriented communications protocol designed for use in conjunction with HTTP
- ▶ **Virtual Private Network (VPN):**
 - ▶ Allows remote users to securely access internal network via the Internet, using Point-to-Point Tunneling Protocol (PPTP)

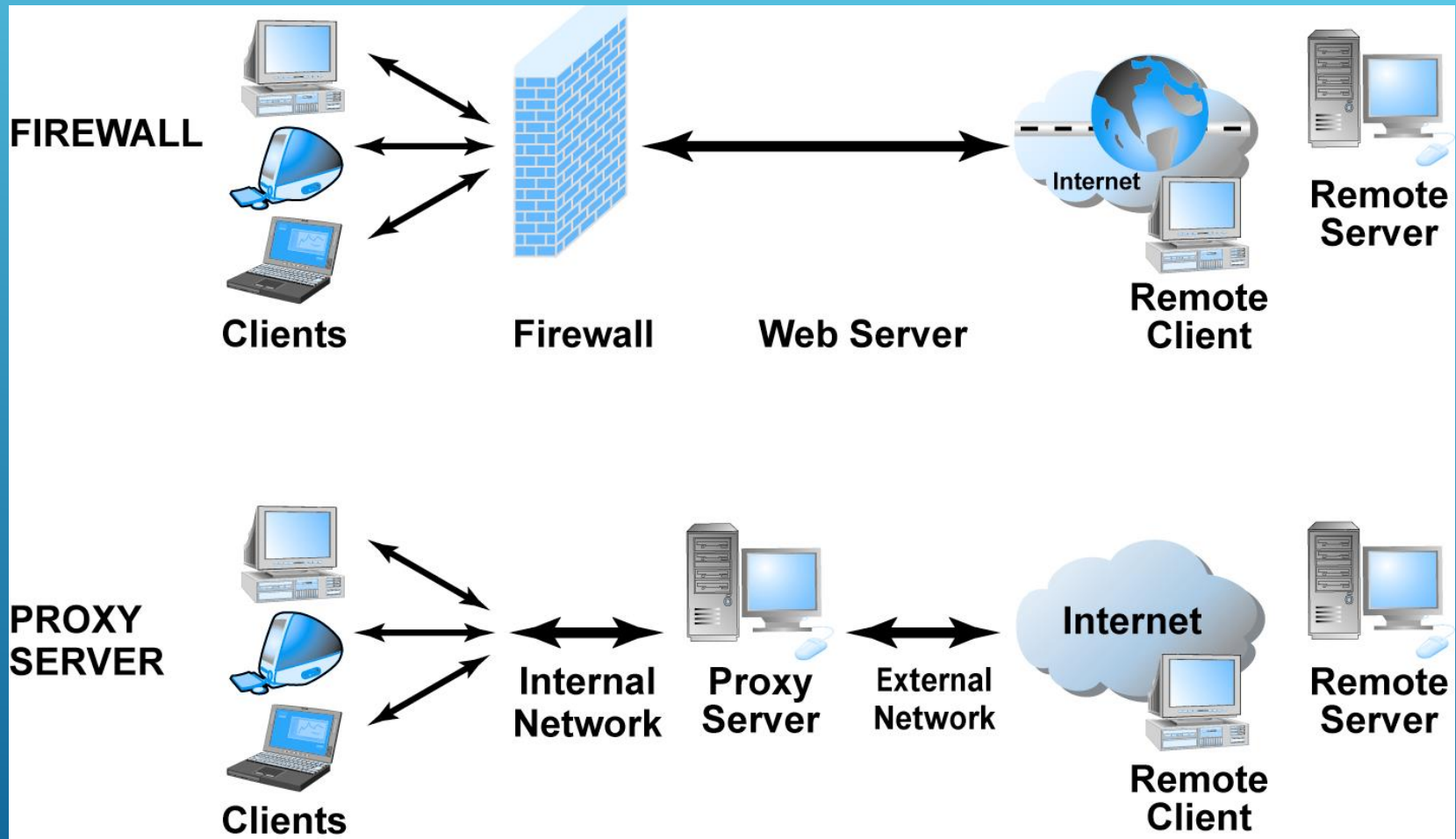
SECURE NEGOTIATED SESSIONS USING SSL



PROTECTING NETWORKS

- ▶ Firewall
 - ▶ Hardware or software that filters packets
 - ▶ Prevents some packets from entering the network based on security policy
 - ▶ Two main methods:
 1. Packet filters
 2. Application gateways
- ▶ Proxy servers (proxies)
 - ▶ Software servers that handle all communications originating from or being sent to the Internet

FIREWALLS AND PROXY SERVERS



PROTECTING SERVERS AND CLIENTS

- ▶ Operating system security enhancements
 - ▶ Upgrades, patches
- ▶ Anti-virus software
 - ▶ Easiest and least expensive way to prevent threats to system integrity
 - ▶ Requires daily updates

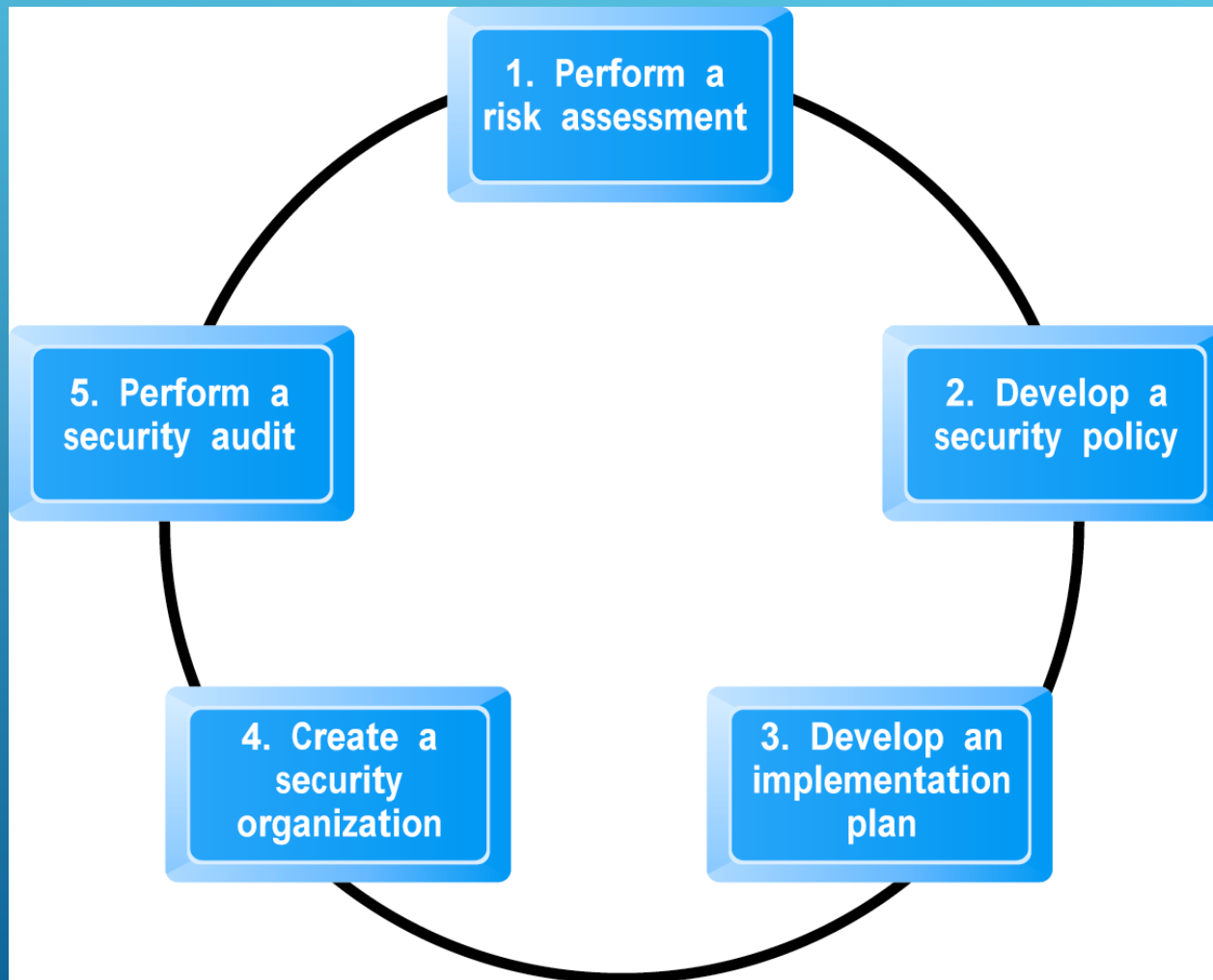
MANAGEMENT POLICIES, BUSINESS PROCEDURES, AND PUBLIC LAWS

- ▶ U.S. firms and organizations spend 12% of IT budget on security hardware, software, services (\$120 billion in 2009)
- ▶ Managing risk includes
 - ▶ Technology
 - ▶ Effective management policies
 - ▶ Public laws and active enforcement

A SECURITY PLAN: MANAGEMENT POLICIES

- ▶ Risk assessment
- ▶ Security policy
- ▶ Implementation plan
 - ▶ Security organization
 - ▶ Access controls
 - ▶ Authentication procedures, including biometrics
 - ▶ Authorization policies, authorization management systems
- ▶ Security audit

DEVELOPING AN E-COMMERCE SECURITY PLAN



INSIGHT ON TECHNOLOGY

SECURING YOUR INFORMATION: CLEVERSAFE HIPPIE STORAGE

CLASS DISCUSSION

- ▶ What is LOCKSS? What are the advantages and disadvantages to LOCKSS?
- ▶ How is Cleversafe's storage method different? How does it work?
- ▶ Why is it accurate to say that Cleversafe's method is "green" or "hippie storage"?

THE ROLE OF LAWS AND PUBLIC POLICY

- ▶ Laws that give authorities tools for identifying, tracing, prosecuting cybercriminals:
 - ▶ National Information Infrastructure Protection Act of 1996
 - ▶ USA Patriot Act
 - ▶ Homeland Security Act

THE ROLE OF LAWS AND PUBLIC POLICY

- ▶ Private and private–public cooperation
 - ▶ CERT Coordination Center
 - ▶ US-CERT

THE ROLE OF LAWS AND PUBLIC POLICY

- ▶ Government policies and controls on encryption software
- ▶ OECD guidelines

TYPES OF PAYMENT SYSTEMS

▶ Cash

- ▶ Most common form of payment in terms of number of transactions
- ▶ Instantly convertible into other forms of value without intermediation

TYPES OF PAYMENT SYSTEMS

▶ Checking transfer

- ▶ Second most common payment form in the United States in terms of number of transactions

TYPES OF PAYMENT SYSTEMS

- ▶ Credit card
 - ▶ Credit card associations
 - ▶ Issuing banks
 - ▶ Processing centers

Reference

1. The Innovation Ultimatum: Six strategic technologies that will reshape every business in the 2020s By Steve Brown.
2. Bank 4.0: Banking Everywhere, Never at a Bank By Brett King.
3. The World of Digital Payments: Practical Course By Pavlo Sidelov.
4. The PayTech Book Edited by a team of Susanne Chishti.
5. The Future Is Faster Than You Think: How Converging Technologies Are Disrupting Business, Industries, and Our Lives By Dr. Peter H. Diamandis.
6. Advances in Financial Machine Learning By Marcos Lopez de Prado
7. Financial Services Revolution: How Blockchain is Transforming Money, Markets, and Banking By Alex Tapscott.
8. The STO Financial Revolution: How Security Tokens Change Businesses Forever By Alex Nascimento.
9. FinTech Founders: Inspiring Tales from the Entrepreneurs that are Changing Finance By Agustín Rubini
10. The Innovation Ultimatum: Six strategic technologies that will reshape every business in the 2020s By Steve Brown