# DPI

oder

Warum wir in unseren Paketen nicht gerne herumschnüffeln lassen.

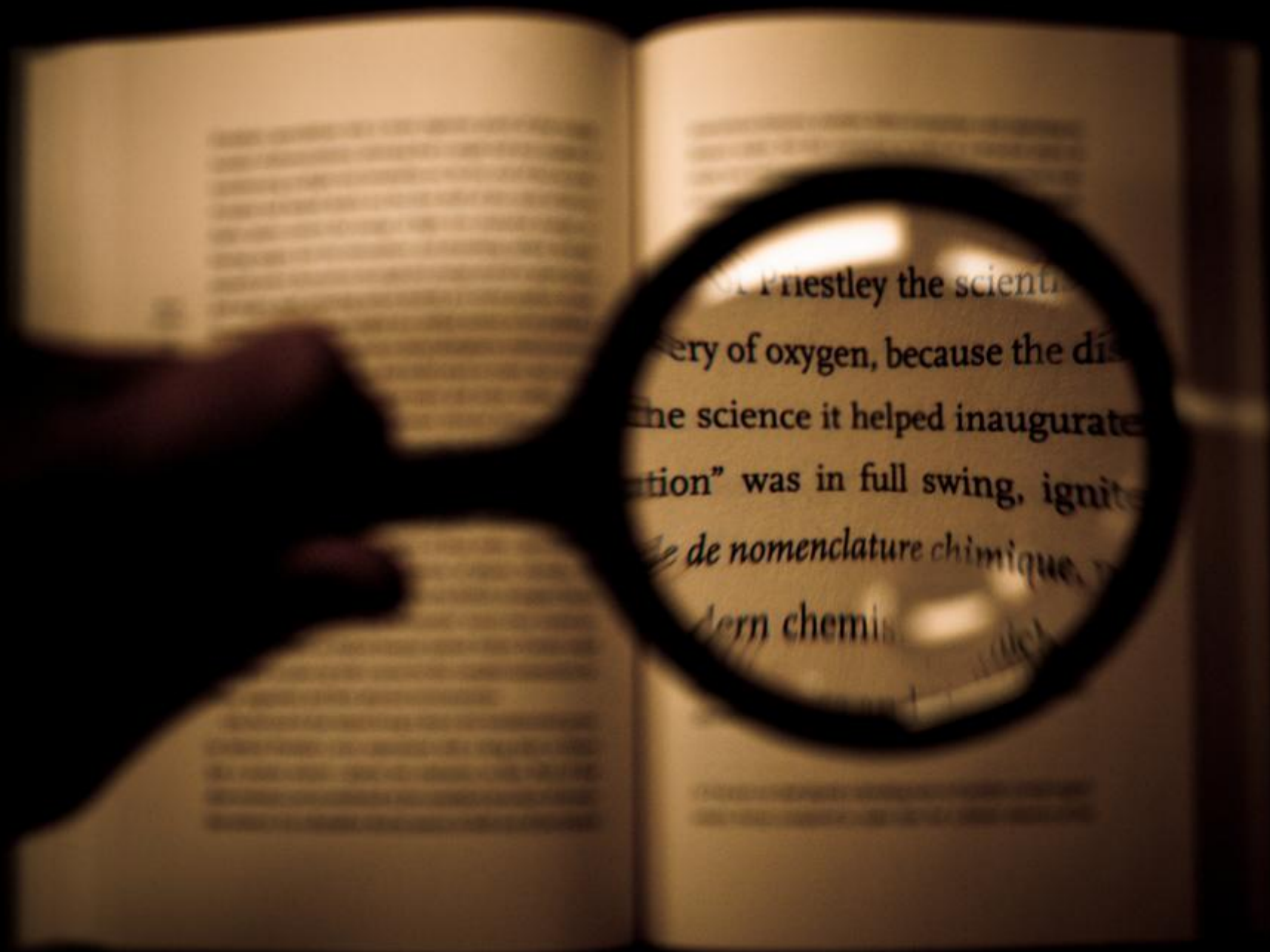# DIGITALE GESELLSCHAFT

# DPI

oder

**Warum wir in unseren Paketen nicht gerne herumschnüffeln lassen.**



Stellen Sie sich vor, die Post öffnet alle Ihre Briefe und liest den Inhalt. Manche schreibt sie um – und andere schmeißt sie einfach weg. Das klingt absurd?
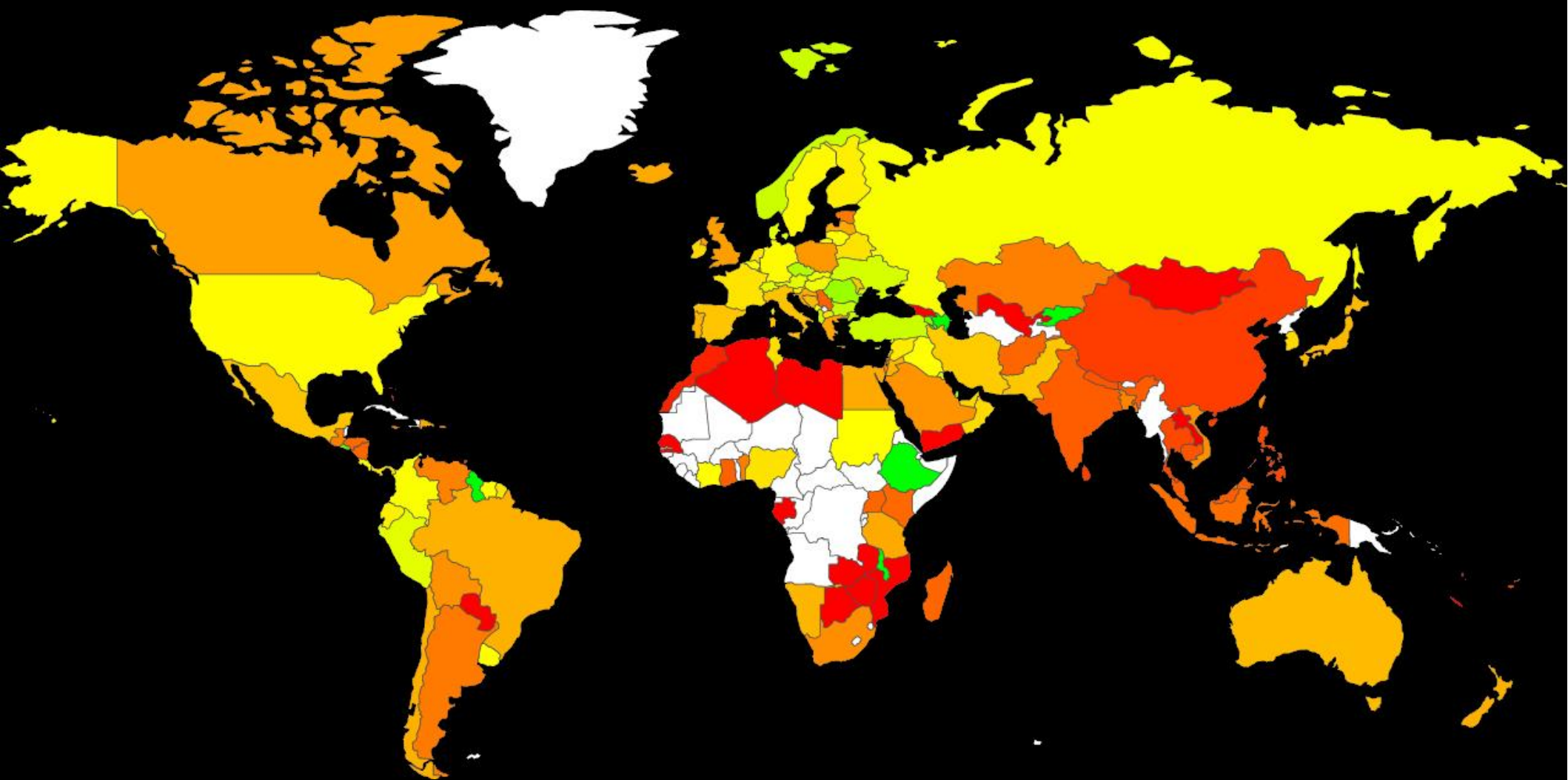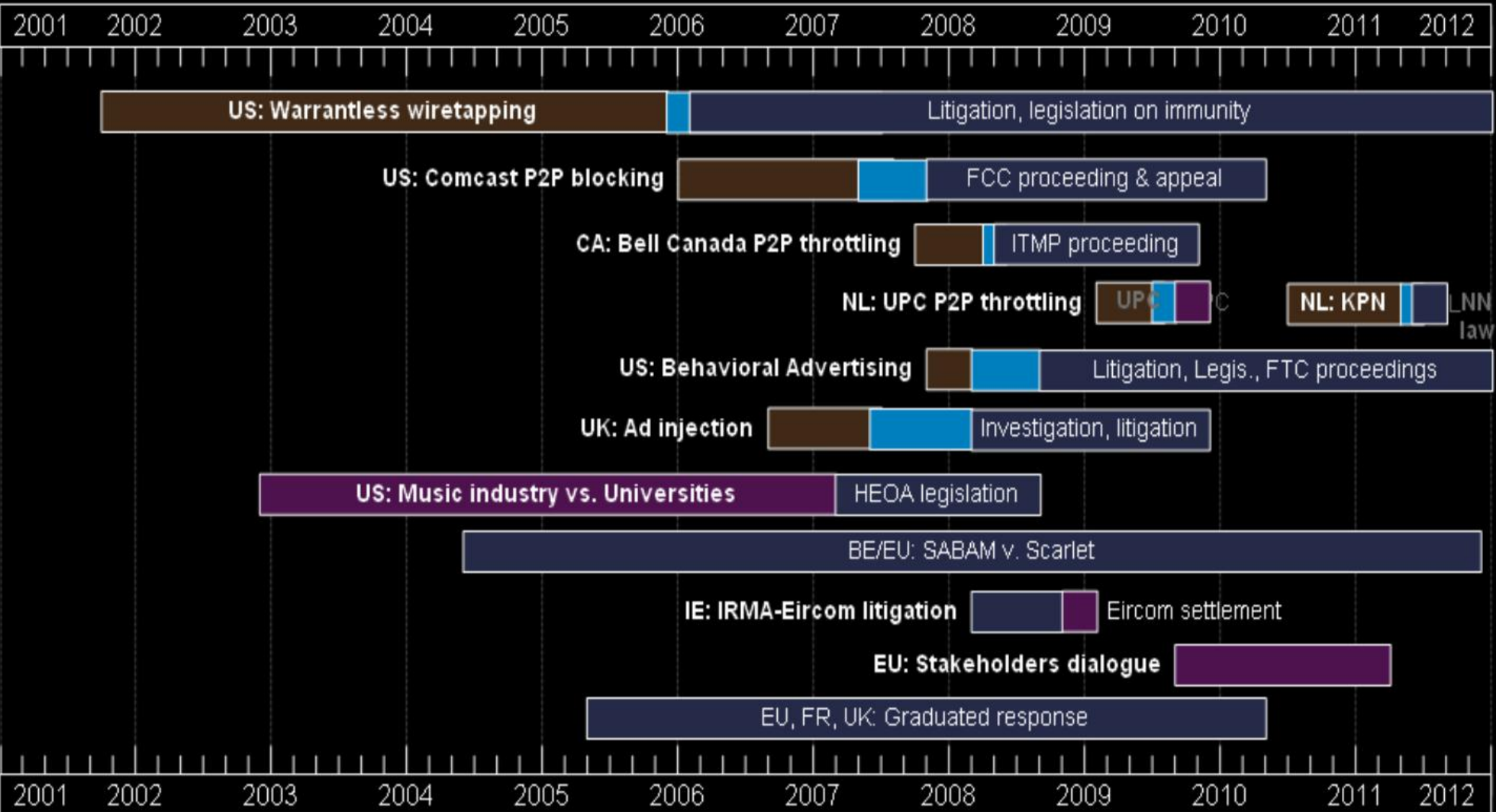
Genau das passiert mit Ihren Daten im Internet.

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netneutralitymap.org
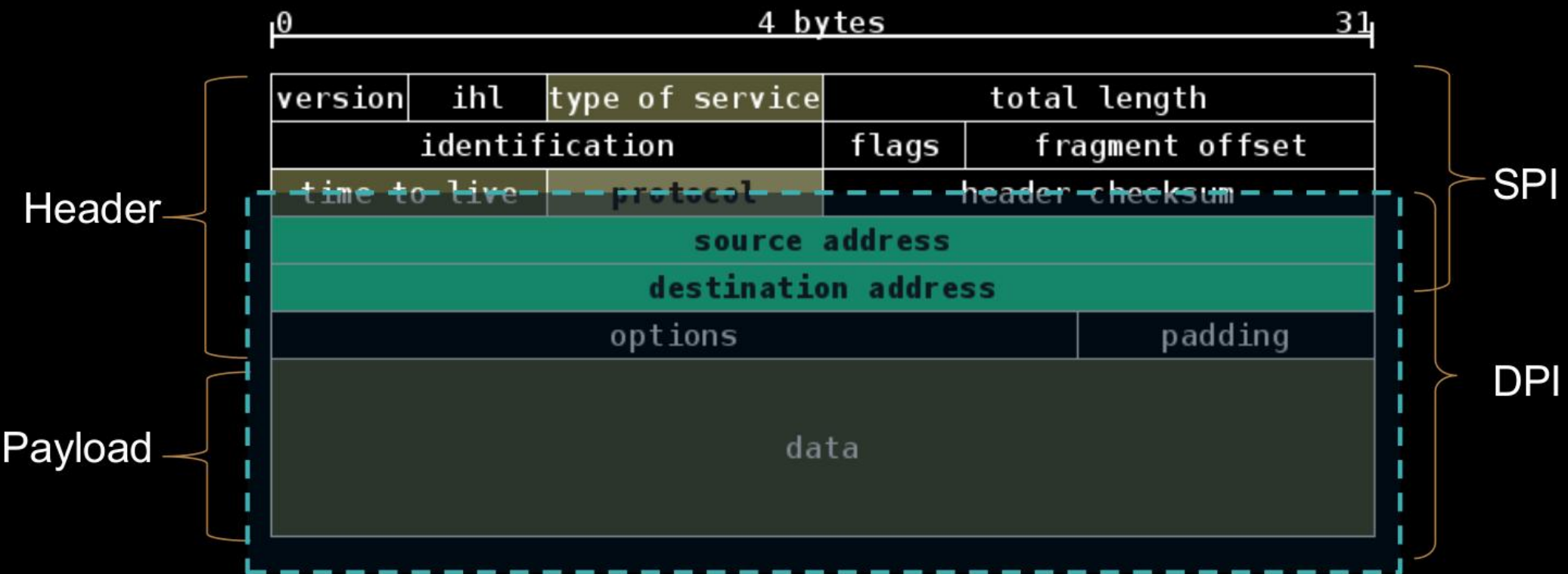
DPI Deployment and Governance

Mueller & Kuehn, 2012
www.deeppacket.info

# A personalised, safer, more interesting internet experience

Personalised content and advertising. Extra online security.

## Personalised and safer internet

PhormDiscover is a free service offered to you by your ISP (fixed or wireless), which automatically brings you relevant, personalised content from across the web.

If you choose to use it, PhormDiscover works for you by understanding your interests from the pages you visit, matching them to the content of millions of websites, and providing you with personalised content.

We also offer PhormSecure, an automatic security capability that warns you if you are about to go to a fraudulent site, and protects you and your family from possible phishing or malware attacks.

These free technologies are paid for by advertising like most of the services that you enjoy on the internet today. But rather than present you with irrelevant ads, Phorm's system anonymously understands your interests and shows marketing offers that are more interesting and useful to you.

See also:

PhormDiscover
PhormSecure
Industry-leading privacy

# FREEDOM ON THE NET 2012
## A GLOBAL ASSESSMENT OF INTERNET AND DIGITAL MEDIA



FREE    PARTLY FREE    NOT FREE    NO DATA

Allot communications
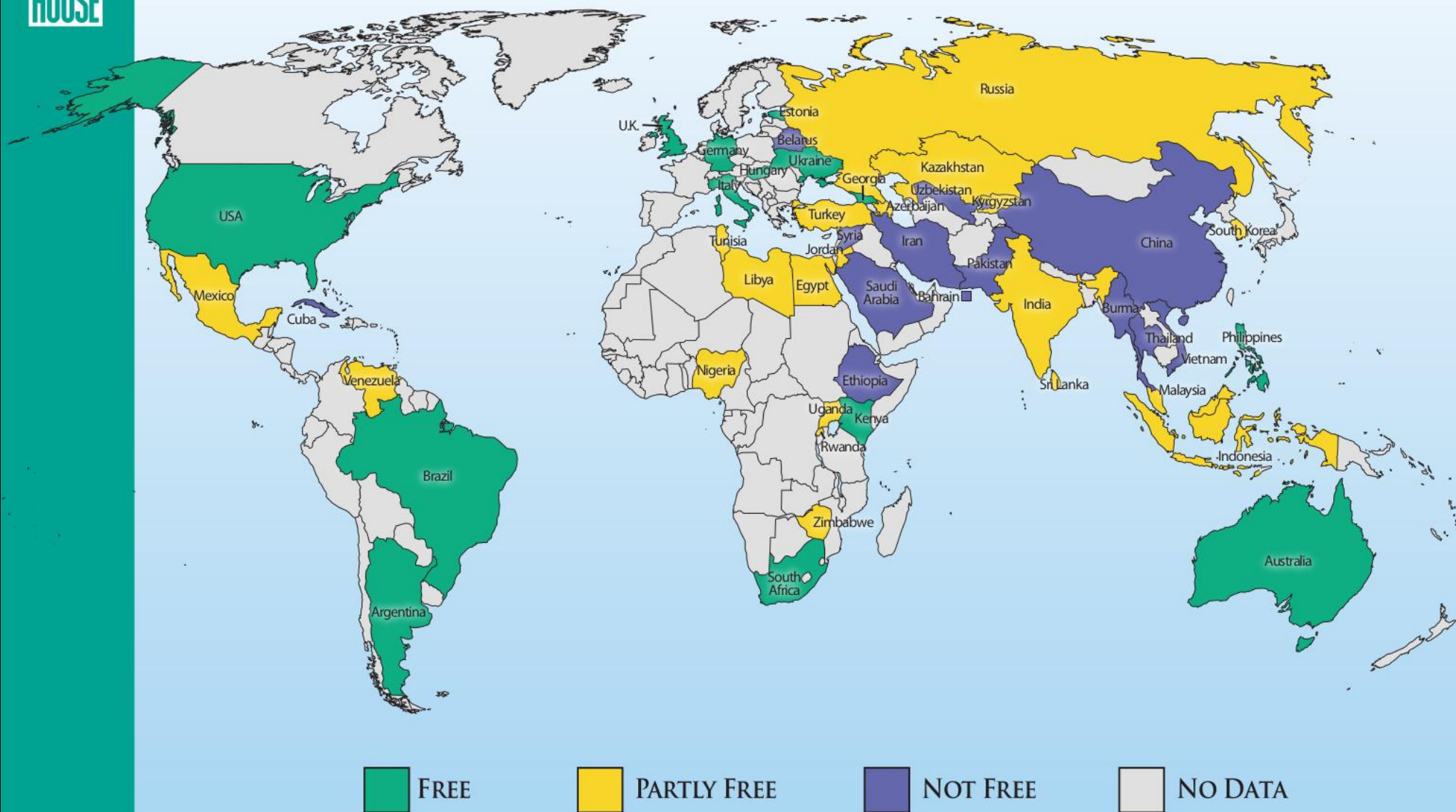
## 4 Layers of Awareness

Intelligent service optimization, monetization and personalization begin with granular visibility and an understanding of how IP-broadband network resources and services are being consumed. To that end, DART provides **four layers of traffic awareness**: application, device, subscriber, and network topology.

### Application Awareness

The phenomenal growth of the smartphone market is reflected in equally strong growth in the number of applications that run on these devices. Users are demanding access to an ever-growing number of services including social networking, VoIP, chat, and video. Allot's DART identifies more over-the-top applications than any other solution on the market and can assign individual policies to each of them. For example, DART is able to identify the voice and chat features of Skype, MSN and Yahoo messengers – enabling operators to gain deeper insights into user behavior.

Through proactive learning, DART is able to adapt to changing tactics as applications attempt to evade detection through a range of measures such as concealment – as in the case of bandwidth-heavy peer2peer applications like BitTorrent. Frequent and ongoing updates to Allot's extensive signature library are designed to keep pace with developments and advances in Internet applications.

### Device Awareness

DART can distinguish between different devices – dongles, smartphones, or tablets; and different handset makers – such as iPhone, Samsung, and Blackberry. End users tend to favor specific devices for certain types of usages. For example, some devices are the choice for bandwidth heavy video applications; others are preferred for latency sensitive applications, such as gaming; while a third type of devices are more user-friendly for emailing. The ability to correlate between the type of device and its most popular usages can be highly instrumental in future capacity planning, in the introduction of personalized service plans, as well as in strategic decision making.

Allot's device awareness functionality enables operators to monitor tethering – using a mobile device as a modem for another device such as a laptop. The ability to identify tethering is important in service plan level enforcement, quota reporting, and charging.

### Subscriber Awareness

DART can also identify the user who is generating the traffic. For example, the service provider may see that one subscriber is streaming YouTube videos to his laptop, while another is "skyping" from her iPhone. DART employs real-time mapping of static or dynamically allocated IP addresses to subscribers and their service plans in order to monitor subscriber-application usage and to track consumption patterns and trends in order to personalize the Internet experience.

## Why Is the Cisco Service Control Engine Important for Service Providers?

The Cisco® SCE Service Control Engine is a network element that provides a powerful service management point based on stateful deep packet inspection (DPI). Instead of processing packets as individual events, the Cisco SCE fully reconstructs flows and the Layer 7 state of each application flow for application- and session-based classification and management of IP traffic for each subscriber. With the Cisco SCE, service providers can:

- Analyze, report on, and bill for subscriber and application usage
- Classify and manage application sessions (including web browsing, multimedia streaming, and peer-to-peer applications)
- Enforce quality-of-service (QoS) policies and service guarantees for latency-sensitive applications (such as VoIP and interactive gaming)
- Implement fair-use policies and manage network congestion by optimizing application-level traffic
- Deploy service tiers based on volume, time, content, and premium IP service delivery
- Introduce differentiated subscription services such as parental controls, turbo buttons, etc.
- Introduce personalized, localized advertising on web pages
- Partner with "over-the-top" web-based content providers by enabling unique service-level guarantees

## What Problems Are Solved?

With millions of subscribers worldwide connecting to an array of media from many sources, service providers have not been able to fully track and bill for all of these services. To reduce network congestion and increase average revenue per user (ARPU) and overall profits, they must do a better job of identi¬fying and tracking subscribers, traffic types and patterns, and managing bandwidth resources.

## How Does the Cisco SCE Work?

The Cisco SCE is deployed at the network access or aggregation layer (Figure 1). In the basic implementation, the Cisco SCE views packets and flows at the application level. It exports traffic records to the Cisco Service Control Collection Manager, which provides data to the reporting tool, including information about frequent users, applications most used, and peak flows.

Figure 1. Cisco Service Control Engine Topology
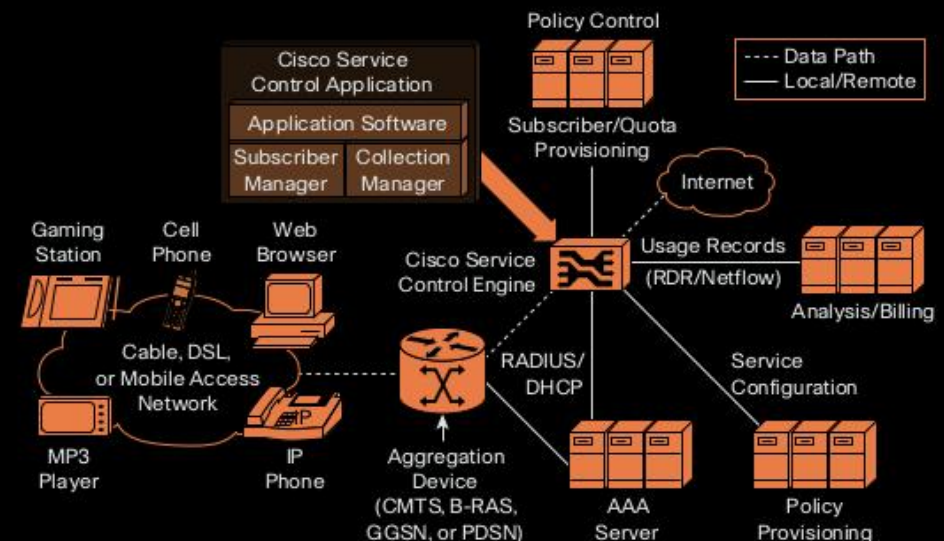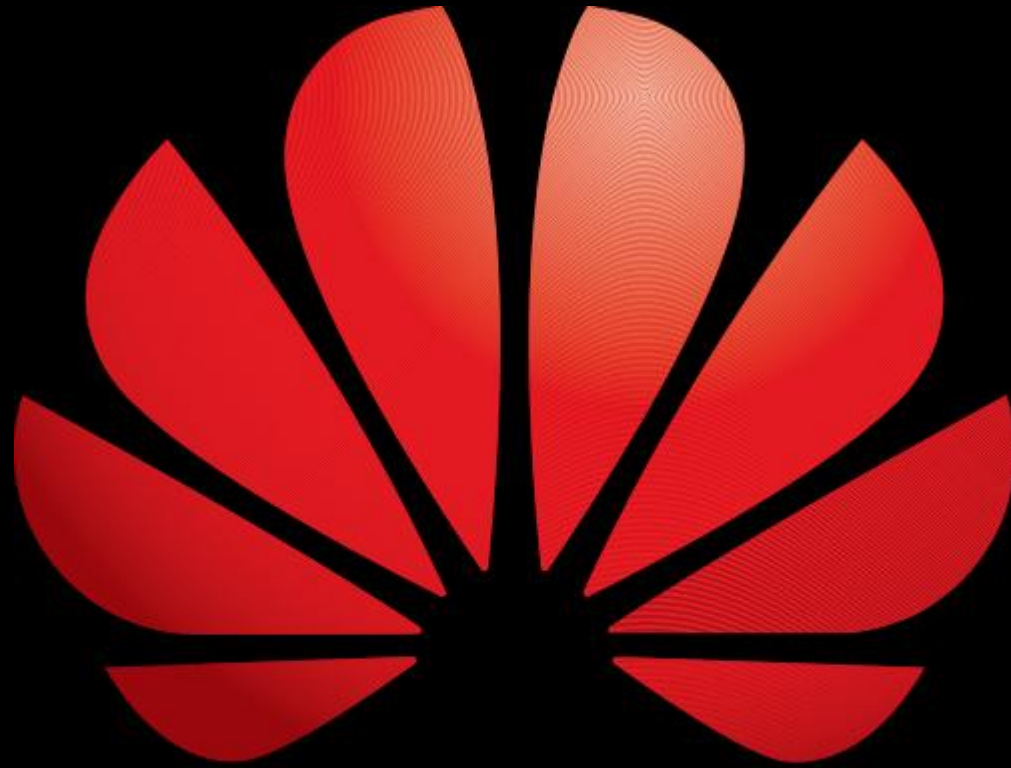
With the fast development of mobile Internet, mobile data traffic volume increases rapidly. However, restricted by technical means of service control, mobile operators have been mainly adopting the traditional "pipe lease" operation model, and only earning limited pipe rental fees. As a result, the traffic volume has tremendously increased but the income has not kept pace. Then how to implement intensive management of bandwidth resources and maintain continuously growing profits?

## Intelligent packet core network

The traditional mobile packet core network is no more than a transparent channel for service bearing. Since it can't distinguish from the varied streams of services passing through the channel, all services are processed as bit streams without discrepancies. Such a channel is usually known as a "dumb pipe".

Since packet core network can not identify different services accurately, operators have to use pipe lease billing based on traffic or time instead of their virtual values to perform flexible billing, management and control. For example, P2P download of flat rate users has accounted for 50% - 80% total traffic, and munched a great deal of bandwidth resources, but generated zero additional income.

On one hand, volume-based billing system is confusing and unattractive for the ordinary users because "data traffic volume" is difficult to understand and measure. On the other hand, the simple time-based billing system, especially the surge of data traffic catalyzed by monthly flat rate billing, has worsened the pipe transparency for operators day by day, tipping the balance between operation and profit.

How can operators promote mobile data business effectively, and continuously make a profit on the surging data traffic by shifting from "pipe lease" operation model to intensive operation?

The transition of mobile data service operation calls for the emergence of an intelligent packet core network, which, based on service awareness, has abundant functionality like content-based billing, service control, bandwidth management, service analysis and personal firewall, etc. The intelligent packet core network gives new vitality to mobile data service operation, and is regarded as the intelligent "heart" of the mobile Internet.

Service awareness means to distinguish the various services carried by the network through deep inspection into the service data packets. Operators can charge according to the services that the users actually use, as is called content-based billing. The control of services is totally dictated by the operators, who can strategically control the access of services to the network, and assign different

# Huawei to build European Packet Switched Core Networks for T-Mobile International

In December 2007, T-Mobile of Deutsche Telekom chose Huawei to build its intelligent packet core network in Europe, covering five European countries, including Germany, England, Austria, Holland, and the Czech Republic. Mr Joachim Horn, the technical director of T-Mobile said, "Through adopting Huawei's leading solution, T-Mobile expects to offer excellent and reliable services to the users, and realize our strategic commercial goal. We see Huawei as a reliable and trustworthy partner, and we look forward to long-term cooperation with each other. "

"We are delighted to continue our work with T-Mobile," said William Xu, President of Huawei Europe Region and Executive Vice President of Huawei, "We look forward to commencing work on this latest project. At Huawei, besides providing advanced solutions featured with large capacity, high performance, intelligent billing and full 2G/3G integration, we are committed to providing fast delivery and excellent service, ensuring a win-win outcome for T-Mobile."

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Corporate Citizenship

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**Publications**

WinWin

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Huawei Service

Huawei People

Events

# Solving the P2P dilemma

In Greek mythology, Sisyphus was a king forced by the gods to continuously roll a rock up a mountain. Gravity would make the rock roll back down and Sisyphus had to repeat this unending labor throughout eternity.
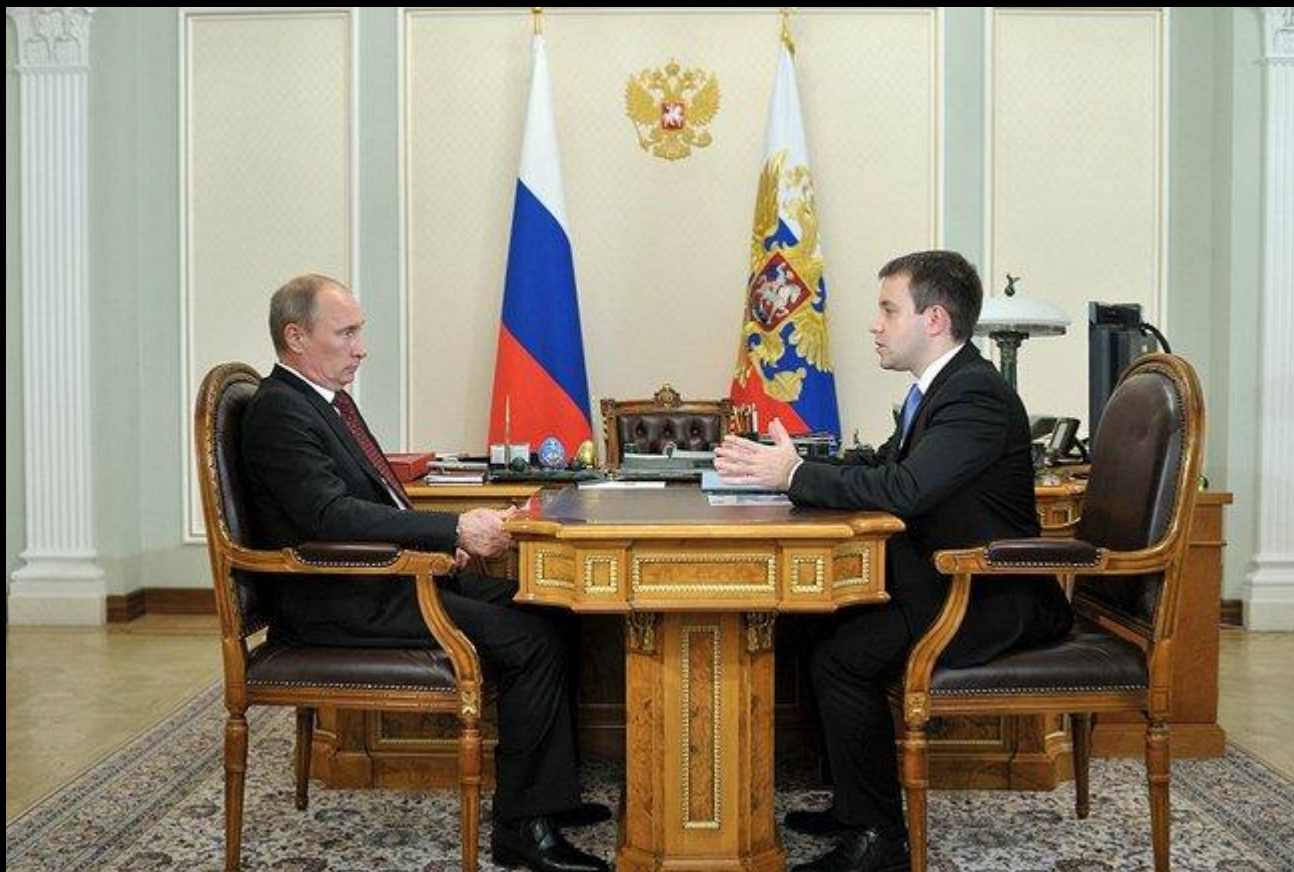
The emergence of P2P technology has brought telecom operators a similar situation. The speed at which operators expand networks always fails to keep up with the growth of P2P traffic. Network bandwidth is the rock and expansion the endless repetition.

## Predominantly P2P traffic

# Представьте себе мир без свободных знаний

Сегодня, 10 июля, в Думе идут слушания о внесении поправок в Закон об информации, которые могут привести к созданию внесудебной цензуры всего интернета на русском языке, в том числе к закрытию доступа к Википедии на русском языке.

Сообщество Википедии протестует против введения цензуры, опасной для свободных знаний, открытых для всего человечества. Мы просим вас **поддержать нас** в противодействии этому законопроекту.
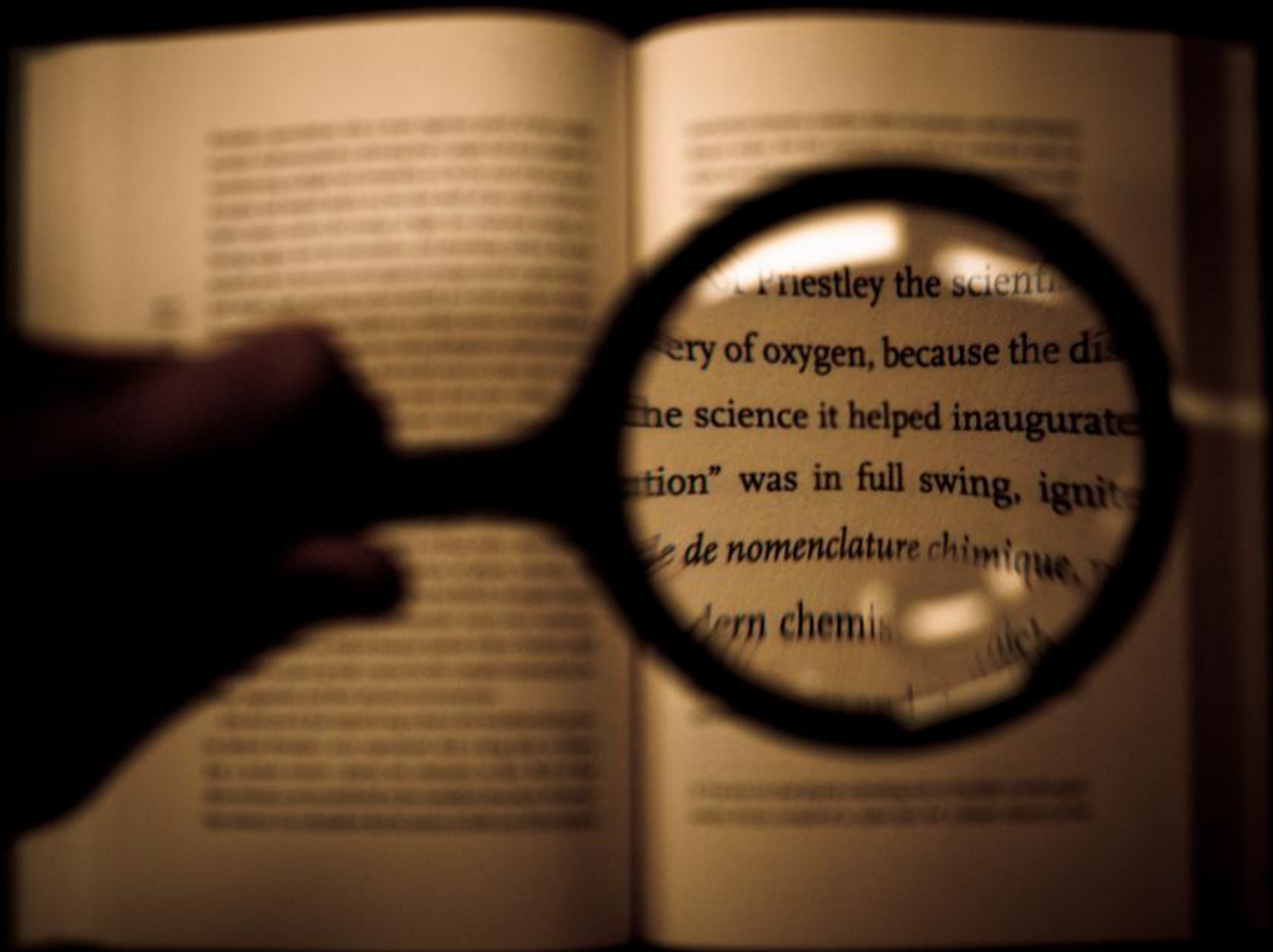
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Der Einsatz solcher Techniken gehört verboten, der Export in nichtdemokratische Staaten unterbunden und unter Strafe gestellt.

Wir brauchen eine gesetzliche Festschreibung der Netzneutralität, um ein offenes Internet zu erhalten.
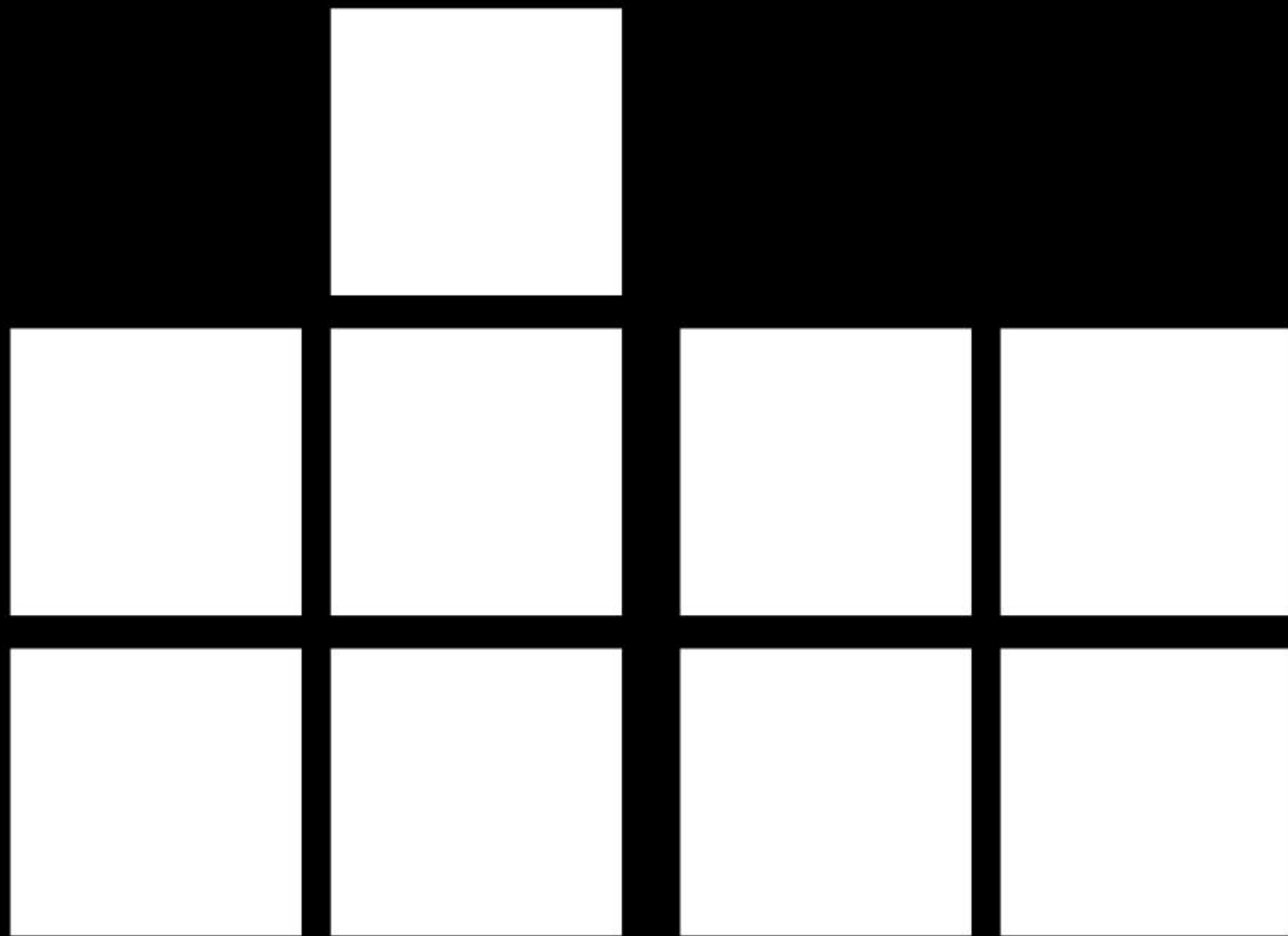
# Deep Packet Inspection
## Nay

# Netzneutralität
## Yay

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www.echtesnetz.de

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