



РОССИЙСКОЕ
ЦИФРОВОЕ
СОТРУДНИЧЕСТВО



The series of international interuniversity conferences
Ecosystem of the Digital Economy

23-24 November, 2019. Tehran

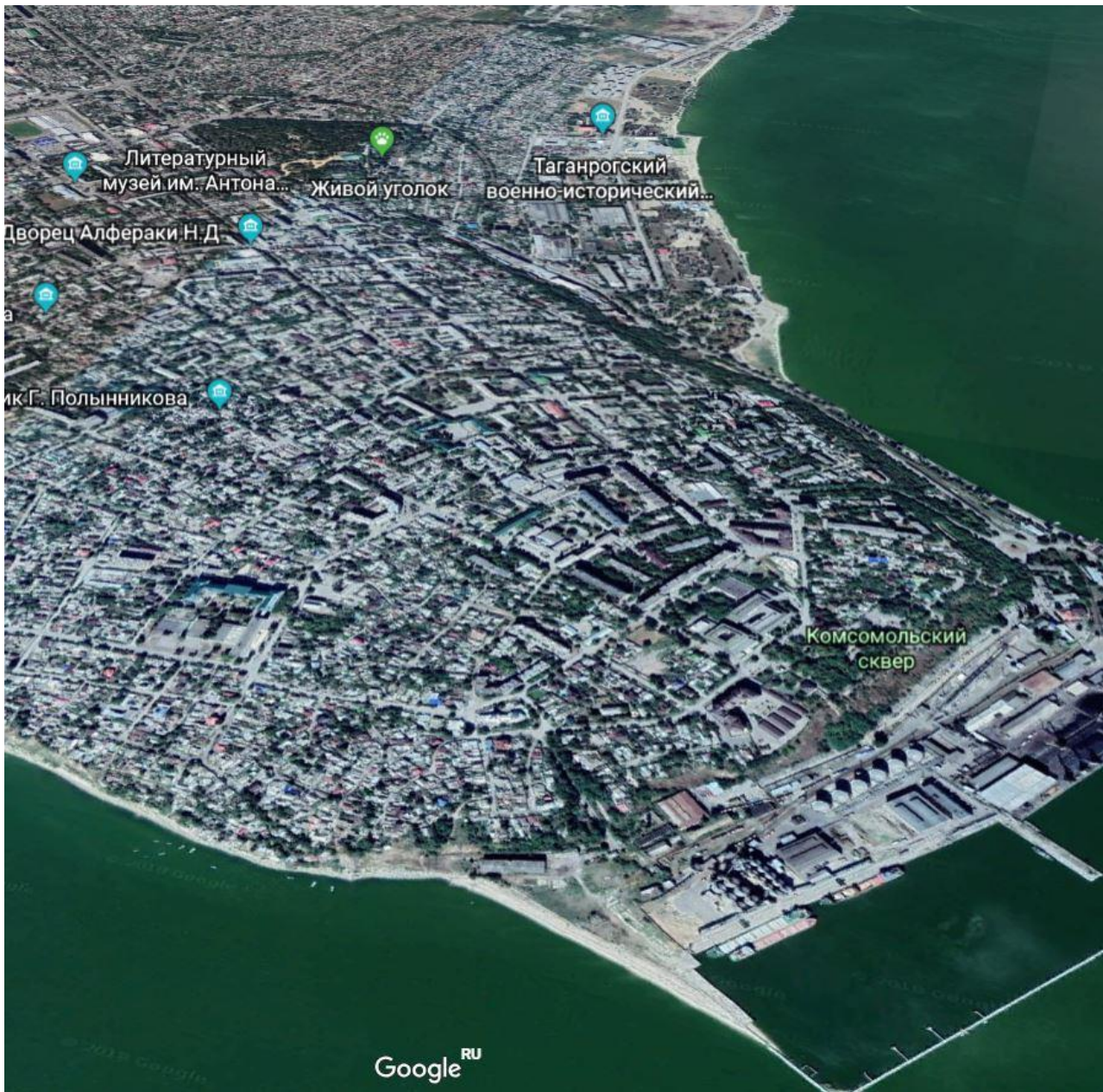
UX/UI-DESIGN TRAINING IN HIGHER EDUCATION: A NEOCLASSICAL APPROACH

Vitaly Kompaniets

Southern Federal University



Институт
Компьютерных
Технологий и
Информационной
Безопасности




Taganrog
small
smart
southern
sea view

3
university
200+
IT company


So what is applied computer science?

Research
Analyze
Design
Reengineering
Automatization




Applied and information
process

Research
Economical analyze
Adaptation
Install&Setup
Implementation



Information
technologies

Design
Developing
Setup
Consulting
Update



Information
systems

PERFORMANCE INDICATORS



But ... why doesn't it work???

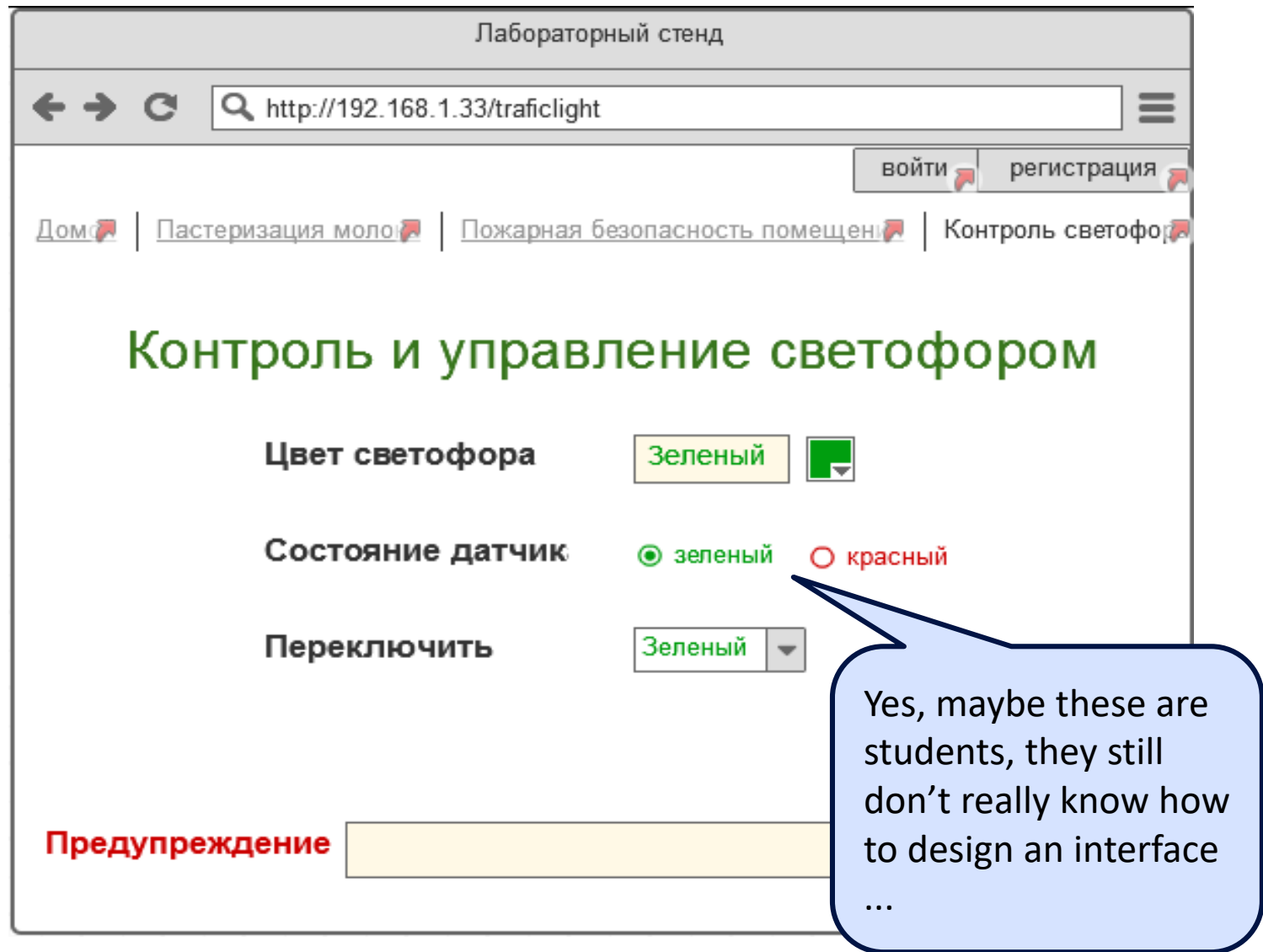
EFFECTIVENESS

QUALITY

In relation to the user, many products are simply boorish

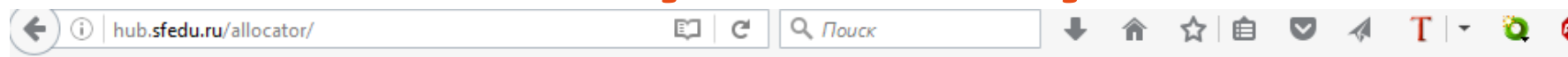


What to do our student?



* Работа выпускника ИКТИБ ЮФУ

Our university e-library



Список размещенных Вами материалов

Наименование материала	Дата создания
научная статья "Факторы, препятствующие развитию инновационного потенциала РФ" в журнале Modern scientific research and their practical application материал размещен в РИНЦ 1 февраля 2016 г. 10:03:03 адрес оператора: upedan@sfedu.ru редактировать описание редактировать права доступа к файлам материала удалить материал	22 января 2015 г. 13:13:12
научная статья "Применение информационно-диагностической системы «CHART 2020» в кабинете коррекции зрения" в журнале Modern scientific research and their practical application материал отправлен для размещения в РИНЦ 5 февраля 2015 г. 10:40:57 отметка оператора: Материал отправлен. адрес оператора: bondareva@sfedu.ru редактировать описание редактировать права доступа к файлам материала удалить материал	28 января 2015 г. 21:13:34
Книга или сборник статей материал размещен в РИНЦ 9 апреля 2015 г. 10:09:24 адрес оператора: goryakina@sfedu.ru редактировать описание редактировать права доступа к файлам материала удалить материал	28 января 2015 г. 21:45:18
Книга или сборник статей материал отправлен для размещения в РИНЦ 5 февраля 2015 г. 14:31:40 отметка оператора: Материал отправлен в РИНЦ. адрес оператора: bondareva@sfedu.ru редактировать описание редактировать права доступа к файлам материала удалить материал	

But here is the current product. Personal account of the teacher in the electronic library of our university. Entries in the list without a title, we must learn to distinguish them by date

* ЮФУ, личный кабинет в электронной библиотеке

Connect (MTS)

This interface is a rebus. Who will guess the network connection status?

Коннект Менеджер

	кбит/с
14936.0	
13069.0	
11202.0	
9335.0	
7468.0	
5601.0	
3734.0	
1867.0	
0.0	

Время соединения 00:00:25

Весь трафик 2.2 МБ

☒ Принято: 2.2 МБ

☐ Передано: 44.4 КБ

Текущая скорость

☒ Приема: 0.0 кбит/с

☐ Передачи: 0.0 кбит/с

Максимальная скорость

☒ Приема: 14.9 Мбит/с

☐ Передачи: 4.7 Мбит/с

Подключен к 3G

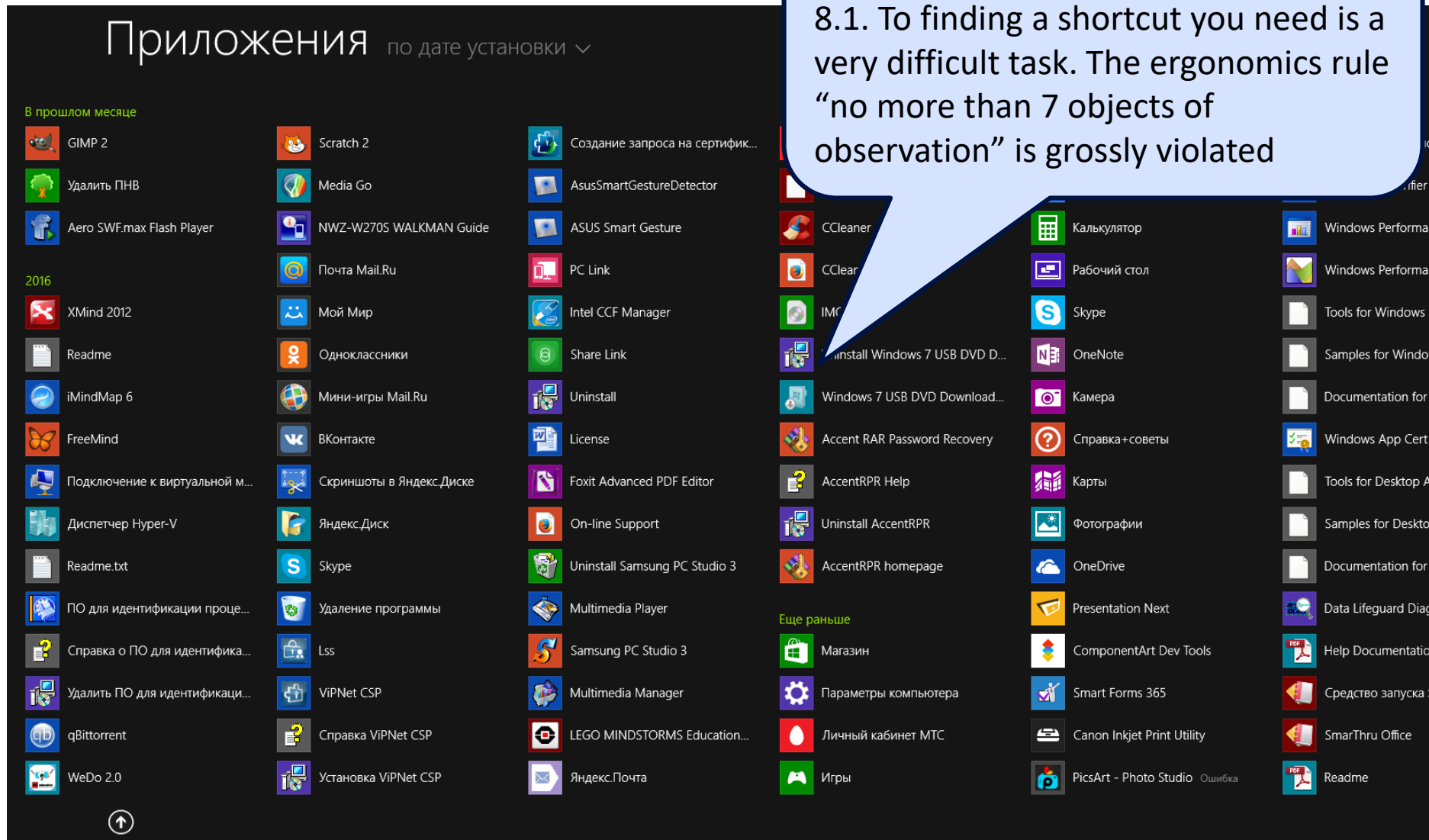
Подключить

Коннект SMS USSD Контакты Настройки

* МТС, коннект-менеджер

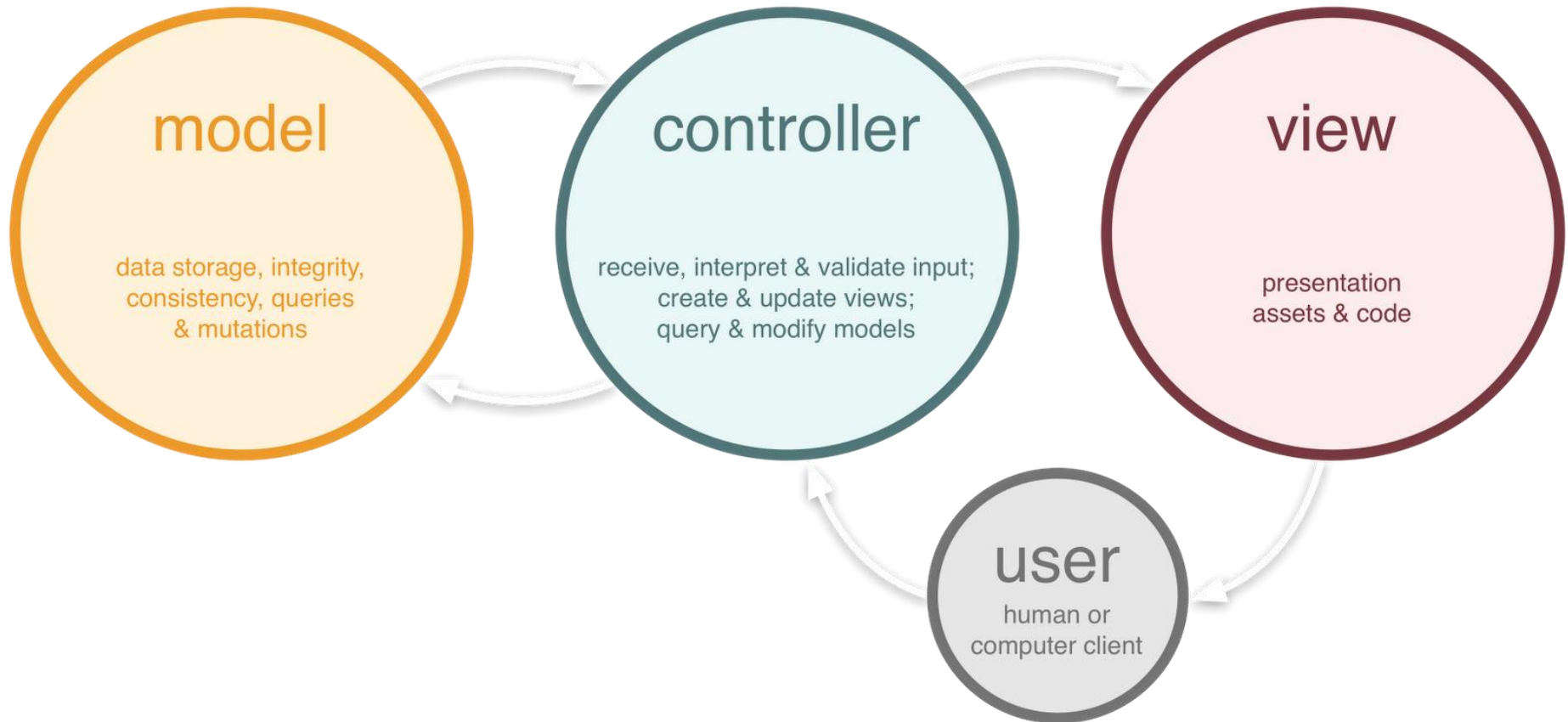
MS Windows 8.1

And the well-known example of the "Applications" window in Windows 8.1. To finding a shortcut you need is a very difficult task. The ergonomics rule “no more than 7 objects of observation” is grossly violated



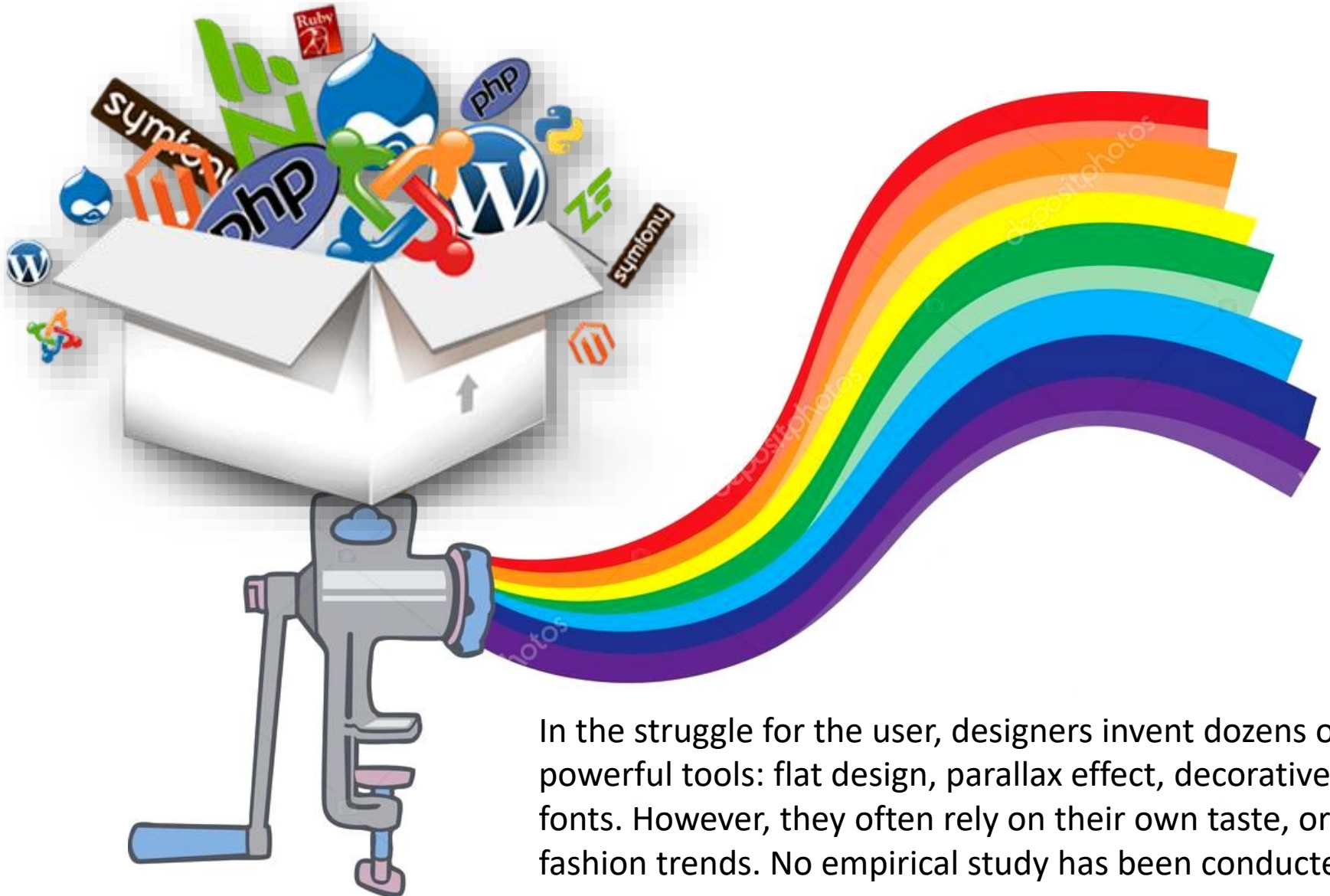
* Microsoft, запуск приложения в Windows 8.1

MVC, why?



Starting from the university, we are taught the basic MVC development model, which separates the processes of data storage, visualization and processing. But integrity is lost, each participant does not have a common vision of the goal, and, most importantly, the functionality of the system is separated from its user interface.

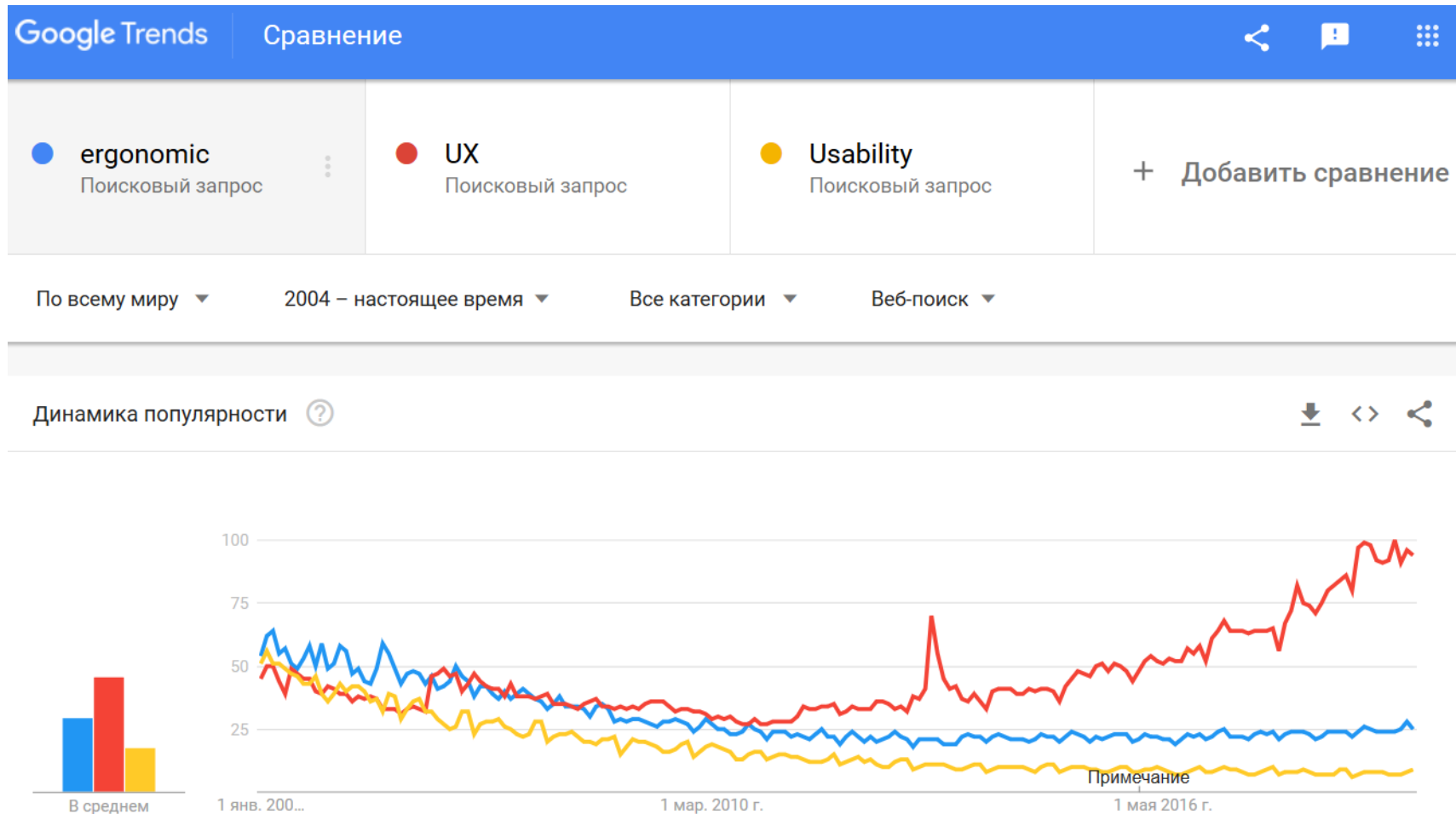
MIX TECHNOLOGIES



In the struggle for the user, designers invent dozens of powerful tools: flat design, parallax effect, decorative fonts. However, they often rely on their own taste, or fashion trends. No empirical study has been conducted.

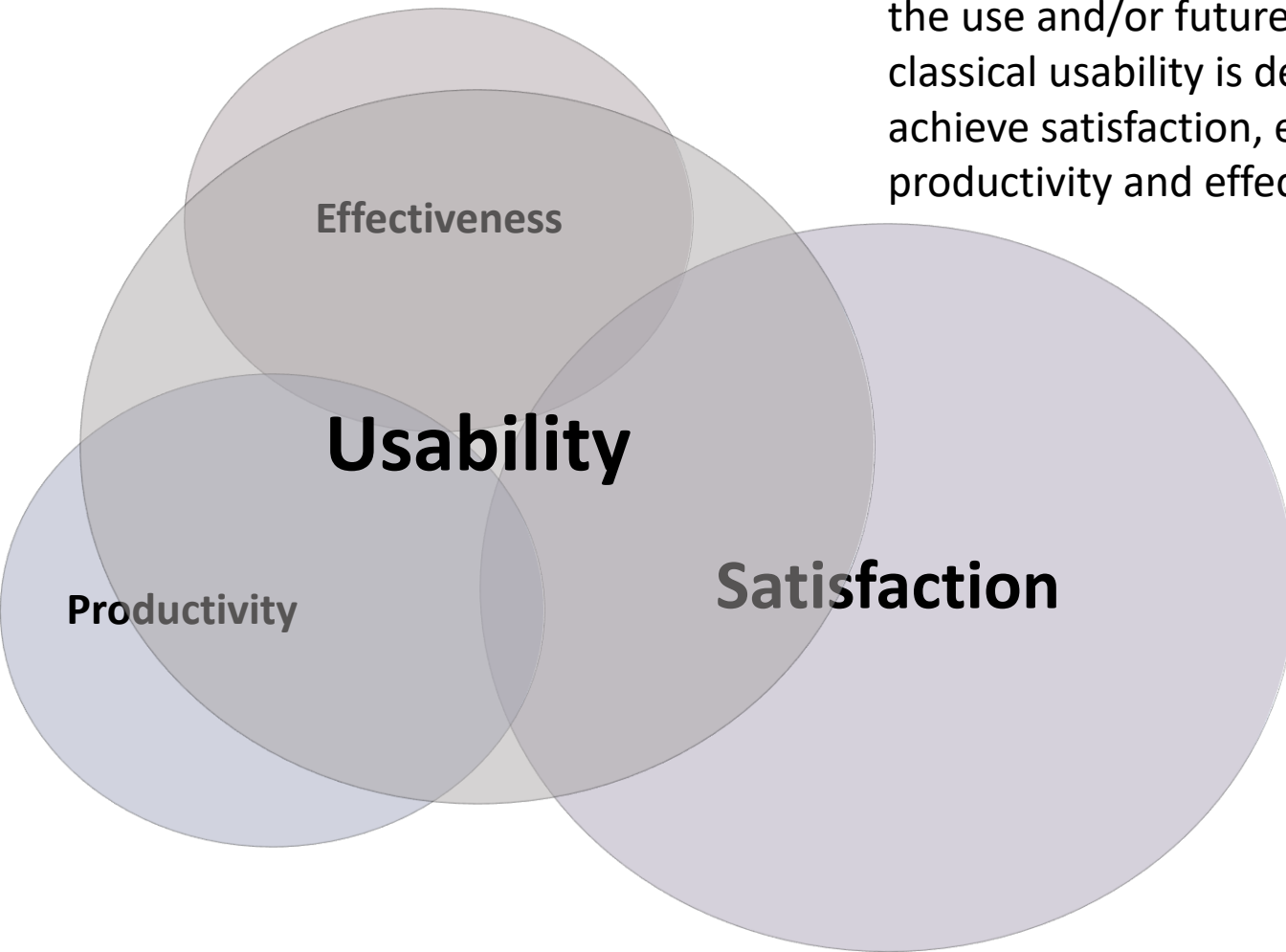
Usability crisis?

We see that it, like ergonomics, is constantly losing popularity. There is no time for research in fast development methods. But at the same time, there is a growing interest in UX - “user experience”, that is, the perception and response of the user that arise as a result of the use and/or future use of the interface



Satisfaction – it is priority!

But at the same time, there is a growing interest in UX - “user experience”, that is, the perception and response of the user that arise as a result of the use and/or future use of the interface. A classical usability is deformed. The main task is to achieve satisfaction, even to the detriment of productivity and effectiveness.



What product is ordered in Technical Task? Wow, killed, stunning, cool...

awesome	великолепный, шикарный	hardcore	жёсткий, крутой
amazing	изумительный, потрясающий	sexy	великолепный, привлекательный
cool	крутой, классный	excellent	превосходный, яркий
wow	приводящий в восторг, ошеломляющий	stunning	ошеломляющий, сногшибательный
beautiful	прекрасный, великолепный	fantastic	чудесный, фантастический
killer	убойный, сногшибательный	outstanding	выдающийся, исключительный
slick	блестящий, гладкий	exciting	захватывающий, волнующий
sleek	элегантный, глянцевый	juicy	колоритный, пикантный
brilliant	блестящий, яркий	fantabulous	потрясающий, крутейший
crisp	свежий, блестящий	cutting-edge	самый современный, передовой
exceptional	исключительный, шедевральный	award-winning	превосходный, заслуживающий награды
pretty	симпатичный, приятный	innovative-looking	выглядящий новаторским, современный

* – по материалам публикаций И. Бурмистрова на сайте <http://interux.ru>

Краткий курс плоского дизайна^[1]

Как сделать,
чтобы
НИКТО НИЧЕГО
не прочитал
и не понял

[1] – по материалам публикаций И. Бурмистрова на сайте <http://interux.ru>

Краткий курс плоского дизайна

Предельно низкий контраст текста и фона

YOU ARE WHAT YOU RIDE

Viewing: Application Process

Simply put, Executive Presence is the ability to exude a charismatic authority that is recognised by the organisation. In reality, it's a combination of things but primarily it's contextual as it is often determined by a company's culture, which makes it fascinating as the organisation norms will often dictate what is accepted as a successful EP profile. A key ingredient is authenticity, or an ability to be credible because as well as exuding it, EP has to be believed.

There are many skills & behaviours that EP covers which can be distilled into the following areas:

1. **Communication Impact** : How do you come across, handle tough questions, interact?
2. **Influence** : How do you get things done, assert and adapt?
3. **Conflict** : What's your conflict style? How flexible are you? Know what 'battles' to fight?
4. **Leadership Style** : How clear and easy to follow are you? How bold are you?

How do you recognise it?

EP doesn't exist everywhere and I've worked in organisations where it doesn't exist at all. When it is evident in an organisation it can show up in any individual, regardless of seniority, although it is more likely to be evident higher up in the organisation. When you see it though, it's striking and immediate. Although, there are times when people can surprise us and also demonstrate EP.

Meet the world's most personal smartphone

Your Windows Phone truly comes alive when the things you love are put in it. People, places, songs, photos, and apps automatically update right on your Start screen. Plus, OneDrive is built in, so you can take your stuff virtually wherever you go. There's never been a smartphone that's more you.

See what's new with Windows Phone 8.1 ➔

Краткий курс плоского дизайна

Инверсная печать (выворотка)

Inky can make email better.

Inky saves you time by displaying all your email messages in one place sorted by relevance. As soon as you sign in for the first time, Inky goes to work figuring out what mail is important to you and helps you find it by placing it above all the other clutter. Inky is customizable and can sort and filter by all the usual criteria as well.

Whether you have one account or five, Inky provides a new, refreshingly simple interface to check all your mail. From one click unsubscribe to package tracking, Inky's smart tools help you get things done and get on with your life.

Inky represents a fresh take on email. Enjoy your email again.

[Back to top](#)

The Arcode Team

Inky was built with care by Arcode, a privately-held company based in Bethesda, Maryland which was founded in 2010 by Dave Baggett (cofounder of ITA Software and cocreator of the Crash Bandicoot video game franchise).

The Arcode team consists of experts and Ph.D. researchers in many different fields, including artificial intelligence, natural language processing, machine learning, big data, low-level coding, computing infrastructure, computer languages, platforms, and environments, operations management, mobility optimization, and graphics.

Almost everyone on the team is a code jockey, contributing directly to Inky's creation.

WHO WE ARE

THE INSIDER'S
VIEW OF A CITY,
FROM PEOPLE
LIKE YOU.

Who's the ideal person to show you round a new city? Someone local who shares your interests, right? Right. That's TriplAgent: the insider's view of a city, from people like you.

When you're travelling, time is precious. You want to get the most out of it. Instead of some trendy, overpriced diner on a crowded tourist street, you want to find that hidden gem of a neighbourhood restaurant. You want to explore; you want the adventure. And now, you have a guide.

If you'd like to help us build the best ever guide to the world's greatest places, get in touch!

Краткий курс плоского дизайна

ВСЕ ПРОПИСНЫЕ

DO YOU WANT TO SELL PRODUCTS
ONLINE VIA YOUR WEBSITE

INDEPENDENT DESIGN &
ART DIRECTION

Ровно в 1914 г. была опубликована первая экспериментальная работа, в которой было показано, что тексты, набранные **ALL CAPS**, считываются медленнее, чем тексты в стиле **Sentence case**.

“WE BELIEVE THE BUSINESS FUTURE OF TRAVEL IS AT THE INTERSECTION OF
TECHNOLOGY + MARKETING”

“WE BELIEVE THE CREATIVE FUTURE OF TRAVEL IS AT THE INTERSECTION OF
USER EXPERIENCE + DESIGN.”

Краткий курс плоского дизайна

«Интересные» шрифты

FF Dagny Thin

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

1234567890

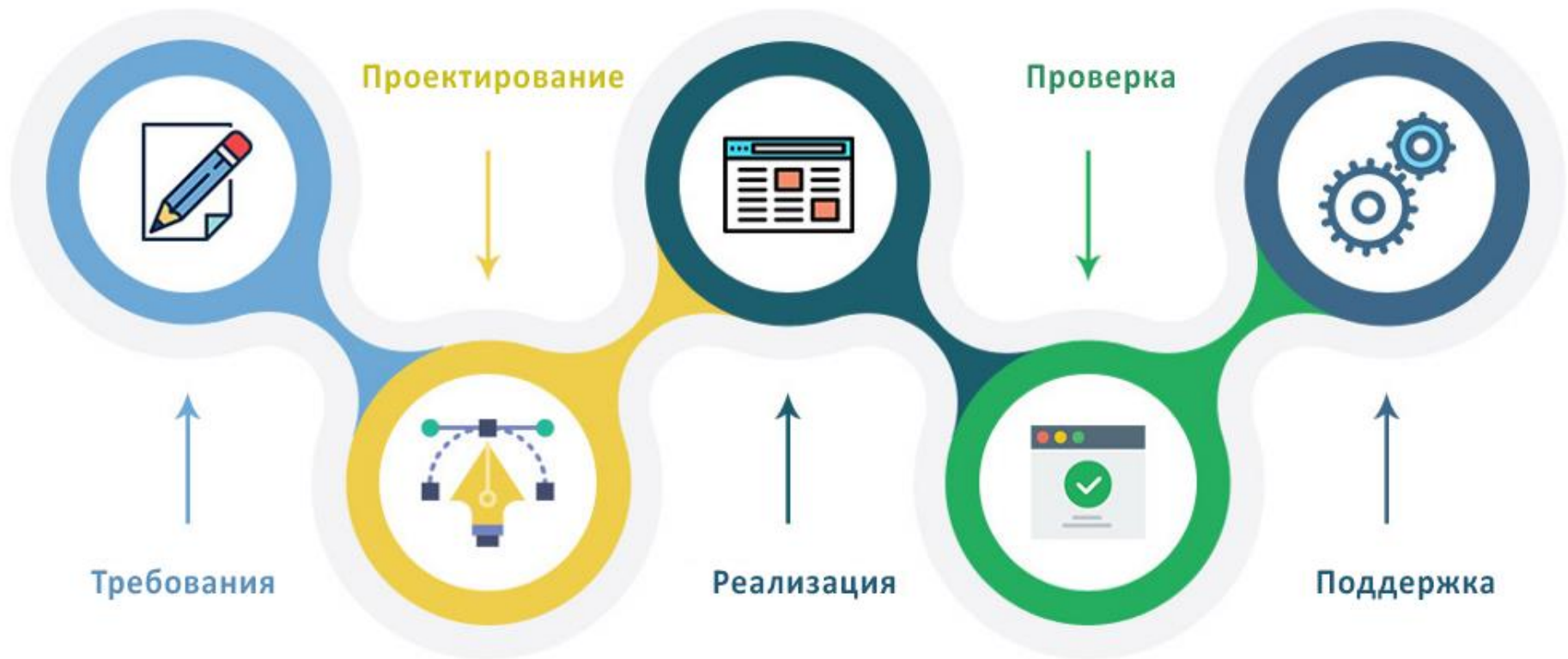
ST Moviehead Ultra-condensed UltraLight

PRINT CLEARLY

A B C D E F G H I J K L M

“
MIGMWA7 IS NOT
ALWAYS THE
FASTEST WAY
”

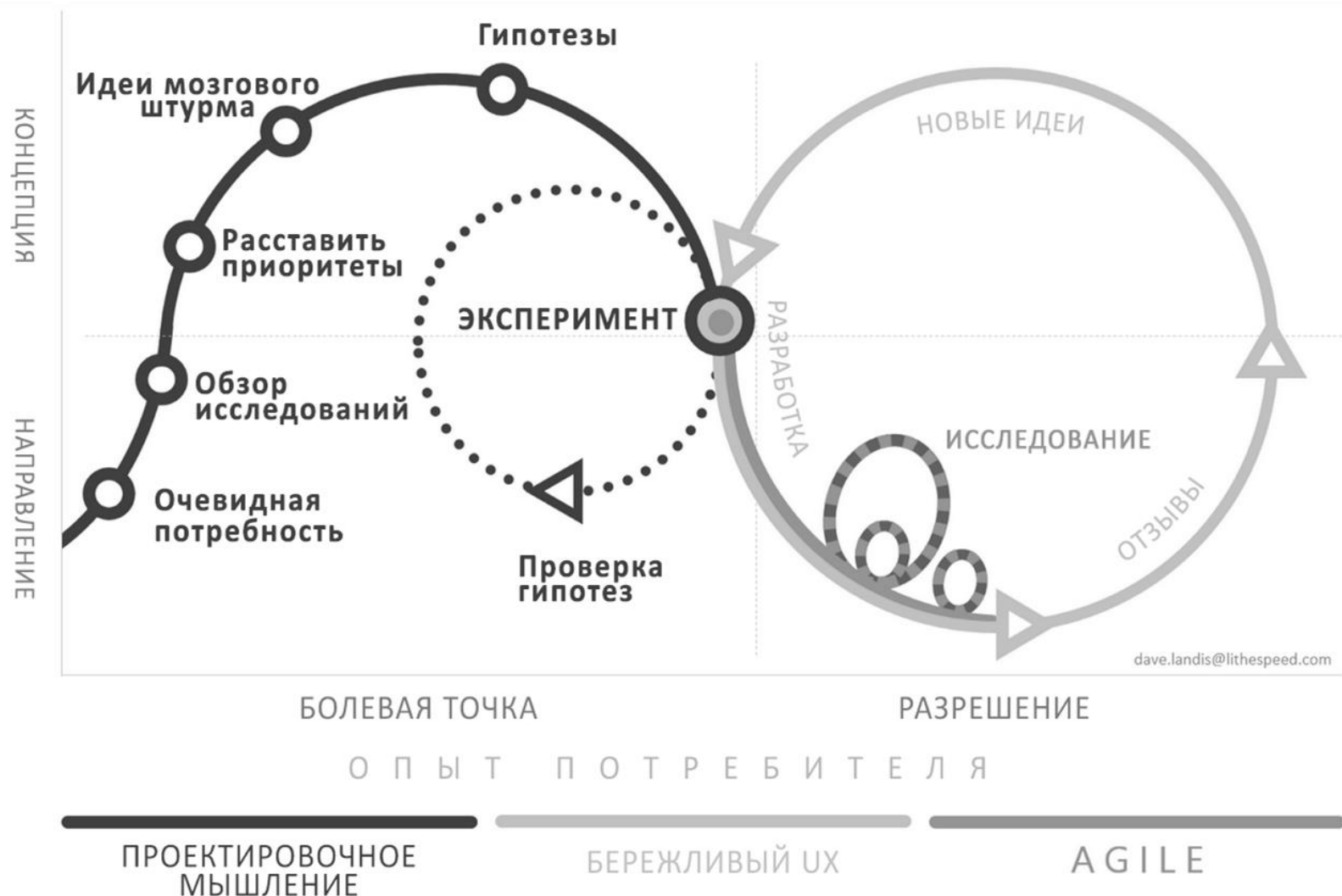
Classical UX - waterfall model



A product team that uses a cascading development model in its work will find out everything that is possible before creating even the simplest prototype. Research can last months or even years; and their results dictate the work of the design team. which is fundamentally incompatible with the Agile method, which focuses on fast iteration, that is, speed and flexibility have replaced accuracy and predictability as competitive advantages

Lean UX

Lean UX appeared, compatible with Agile. The main idea is to create the simplest version of the idea, test it, and if there are no valuable results, refuse



Google Ventures Design sprint

The sprint design is a classic UX with low accuracy, which allows you to identify and test prototypes quickly. That is, when developing, we act on a standard system and rely on ready-made solutions.

day 1



understand

- who are the users
- what are their needs
- what is the context
- competitor review
- formulate strategy

2



diverge

- envision
- develop lots of solutions
- ideate

3



decide

- choose the best idea
- storyboard the idea

4



prototype

- build something quick and dirty to show to users
- focus on usability not making it beautiful

5



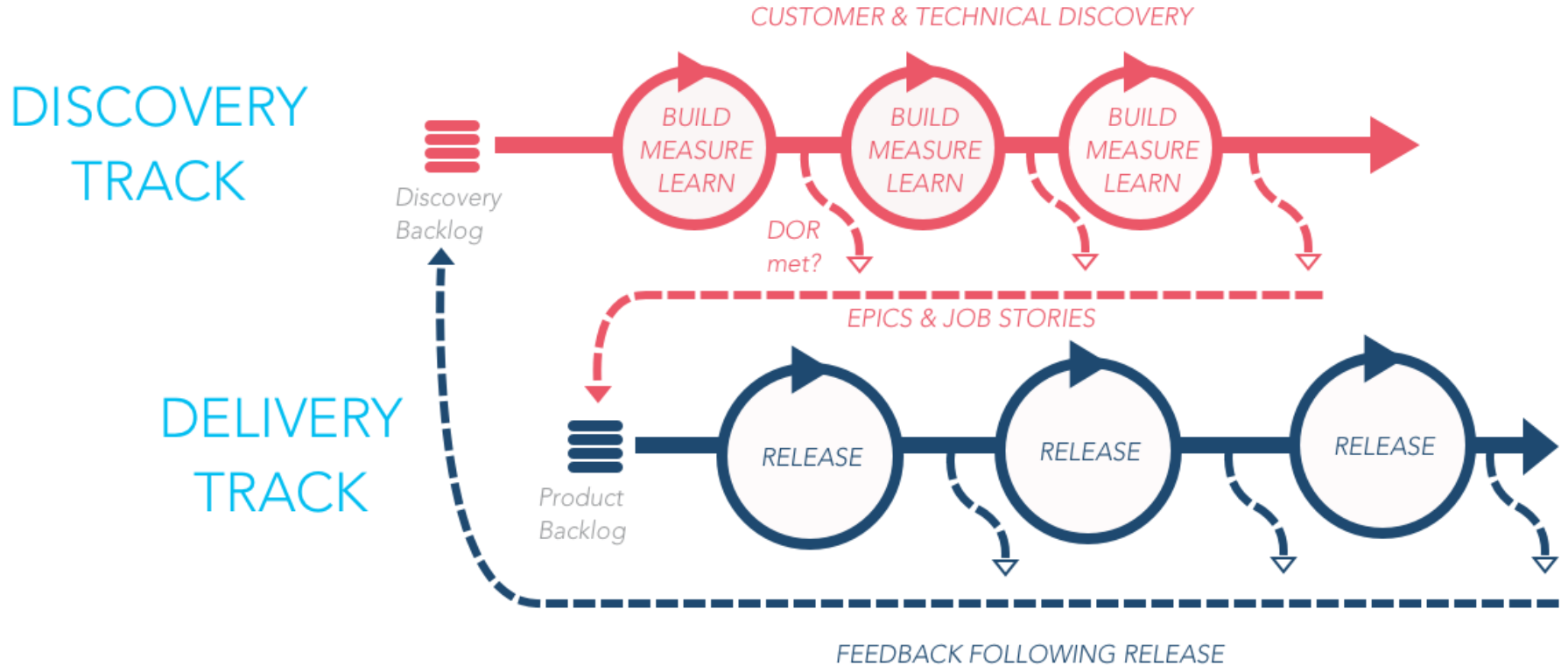
validate

- show the prototype to real users outside the organisation
- learn what doesn't work

Dual-track agile

And finally, another approach appears that combines both methods, defining two parallel working teams - production and research, the last one feeds developers with information about user experience

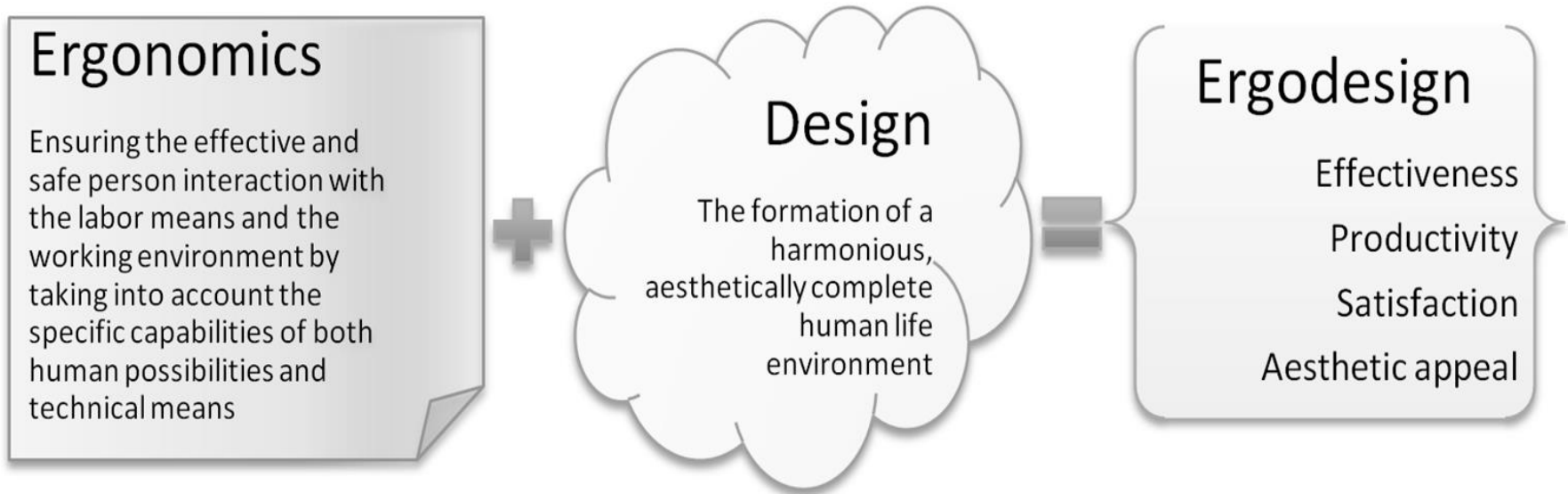
At the same time, we want to simplify the development process, but in the end we complicate it.



What to do?



The “Ergodesign” concept



Ergodesign is a new direction of human-oriented scientific and design activities, in which aesthetically and ergonomically complete objects and a subject-spatial environment are created through the integration of design and ergonomics

The goal for the designed software product is to balance the design form and ergonomic content

Our master's program



We are preparing masters of applied informatics who are capable from a system perspective to design ways of effective human-machine interaction and create software products with an “ergodesigned” interface that meets the expanded requirements for layout and visual design, information architecture, and the degree to which the functionality matches user tasks and goals



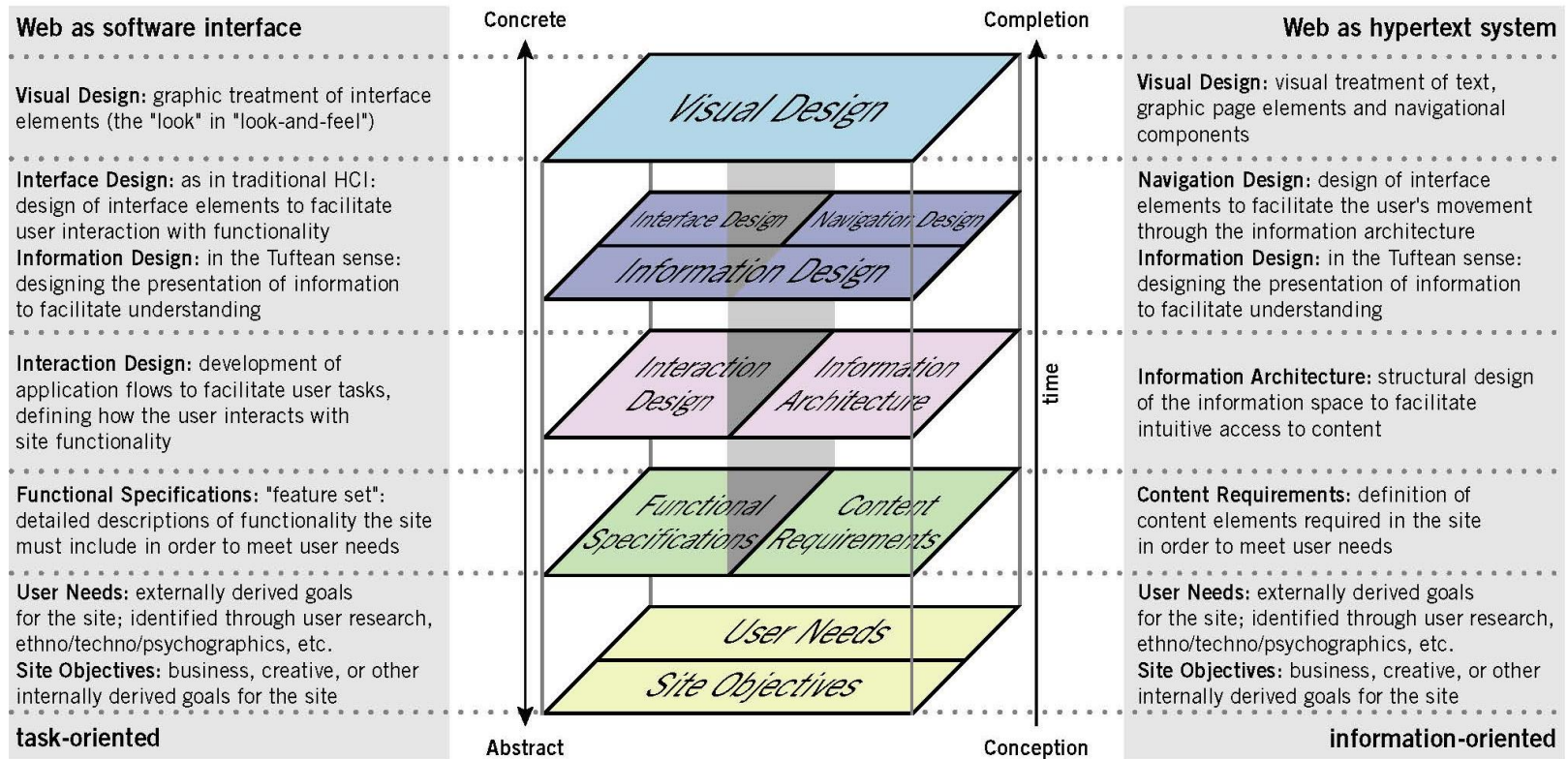
So, we come to the main question, what to do to optimize the learning process and to let out of the university walls the specialists who are able to qualitatively solve the tasks of interface design?

As the analysis result of the user experience evolution, we came to the conclusion that the modern UX methodology contains in its basis a classic cascading UX process that is only maximally accelerated (the goal is to “hastily and roughly” get MVP - Minimally viable product) after a flexible development.

Therefore, it was decided to include the classical UX process into the training courses, gradually mastering which, students could further develop practical skills, improve them, increase the pace of work, successfully integrate into a modern design and development processes.

“NEO”classical UX

The Elements of User Experience (J.J. Garrett)



The classical model of user experience elements developed by Jess Garrett was chosen as the supporting model and basis for the UX workshop at the university (our master's program): from the abstract level of “strategy” to the detailed level of “surface” of the software product.

In fact, the Garrett system of elements provides a well-applicable visual structure of the user experience classical study (from general to particular) in the educational process

The level of strategy

The Problem Tree

Further Effects
Symptoms

Direct Effects

Core Problem

Direct Causes

Indirect Causes



The Goal Tree

Goal Indicators

Core Goal

Sub goals

Tasks,
Necessary Conditions



The level of strategy user model

Based on the materials received, we form a model of the user representation - the key character of the system. His/her goals and motivation for using the product, as well as the context of the product use (when, why and how). And here the advantage of using photo collage in the description of the user's model is that it conveys more information that is difficult to express in words.

The level of opportunities

Фильтрация телепрограмм по категории	✗	✗	✗	✓	✓	✓	✓	Must have
Фильтрация каналов по тематикам	✓	✓	✗	✗	✓	✓	✗	Must have
Календарь: навигация по дням	✓	✓	✓	✓	✓	✓	✓	Must have
Популярные телепередачи (превью)	✓	✓	✗	✗	✓	✗	✗	Depends
По каналам (композиционно)	✗	✗	✗	✗	✓	✓	✓	Depends
Фильтрация каналов по пакетам	✗	✗	✓	✓	✗	✓	✗	Uncertain
Фильтрация по времени: сейчас	✗	✓	✗	✓	✗	✓	✗	Uncertain

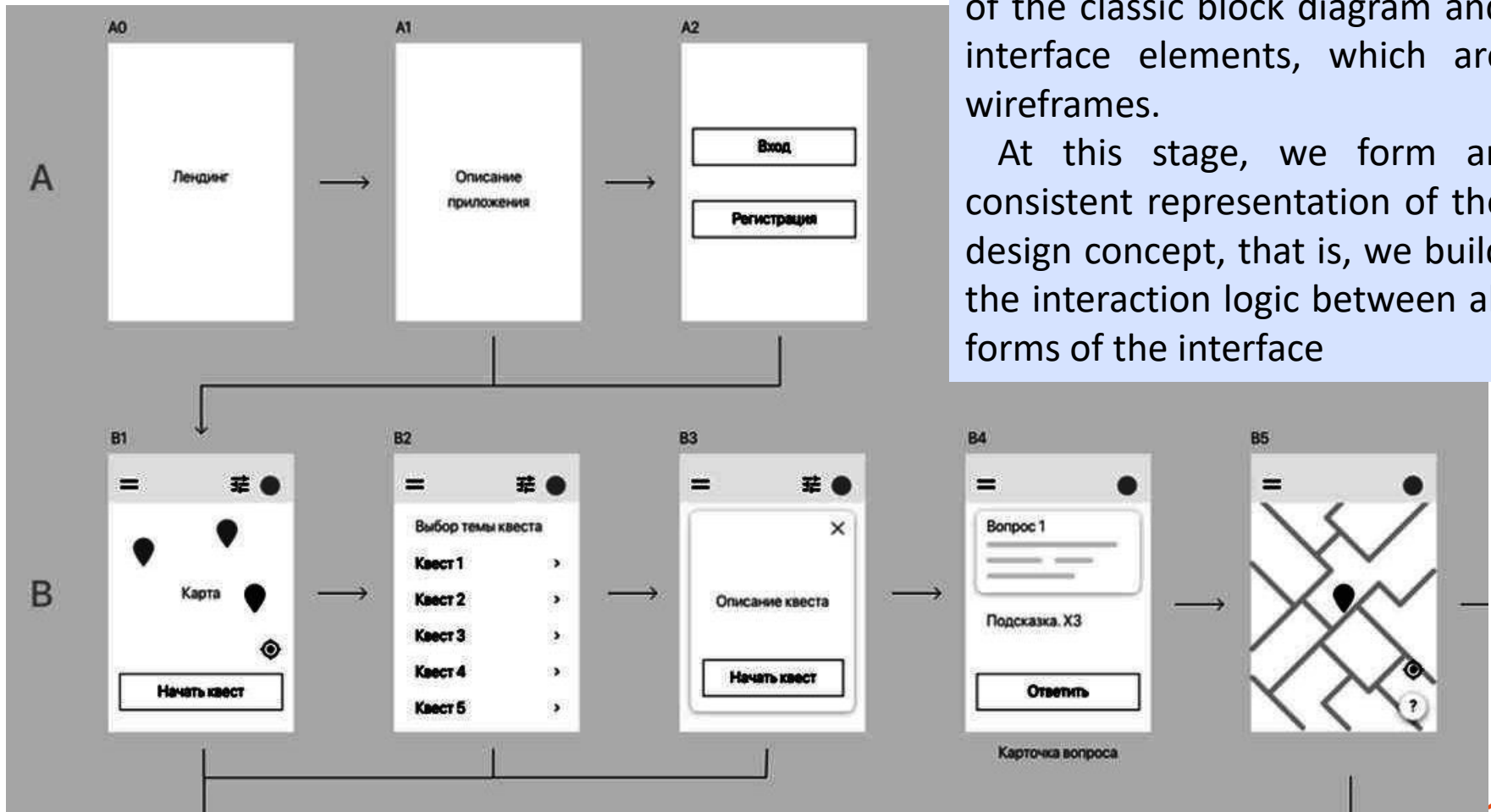
The task is to get an idea of the functionality and product content requirements.

This is achieved by an existing peer products analysis.

We study the functionality, features of the content and form an idea of possible problems and their causes.

As a result, we formalize the functionality of the product under the development

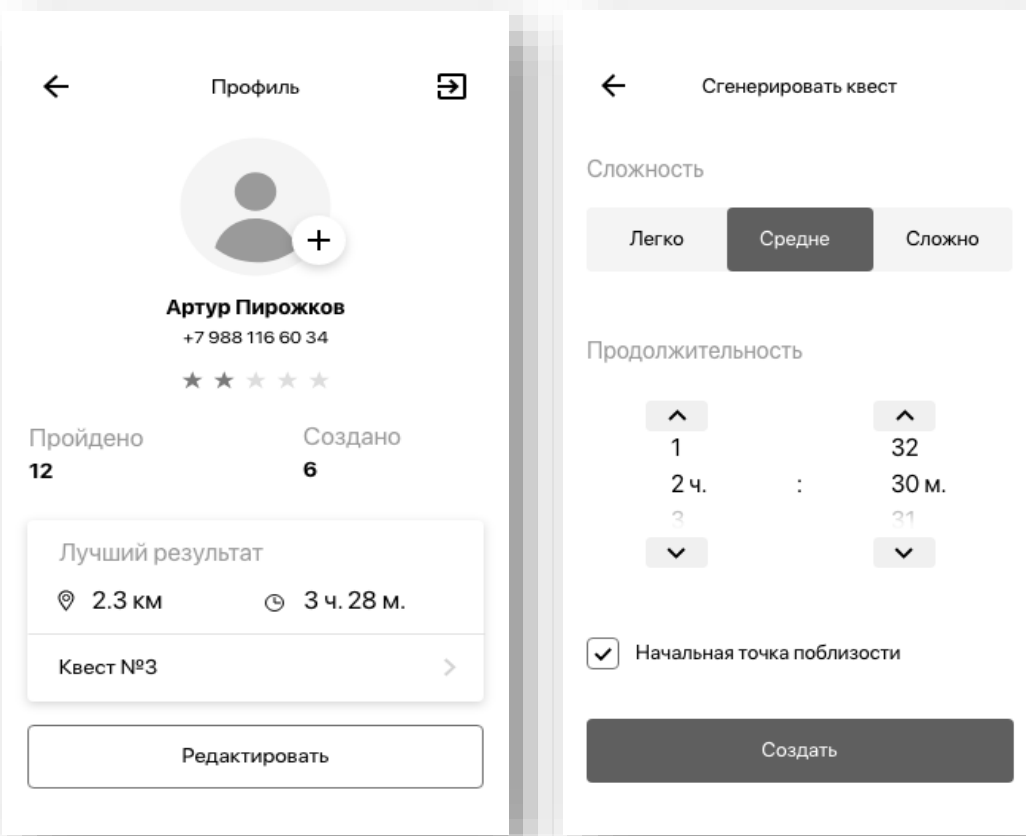
The level of structure



This is achieved by User Flow obtaining - the so-called hybrid of the classic block diagram and interface elements, which are wireframes.

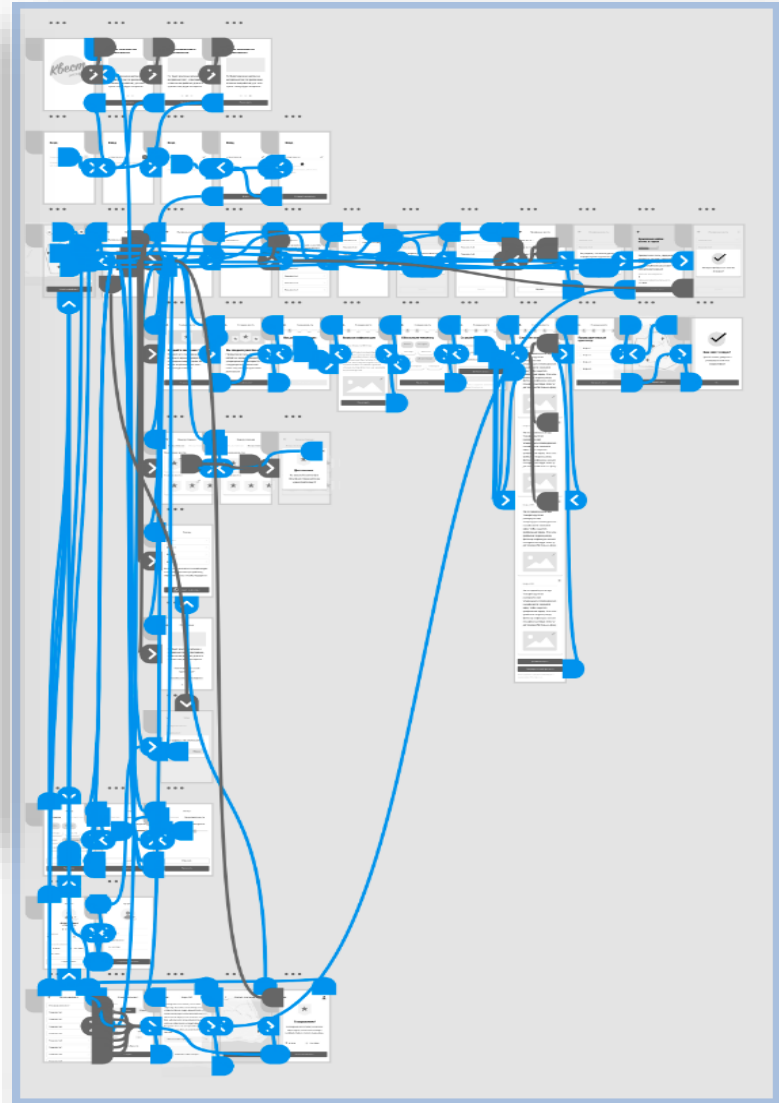
At this stage, we form a consistent representation of the design concept, that is, we build the interaction logic between all forms of the interface

The layout level

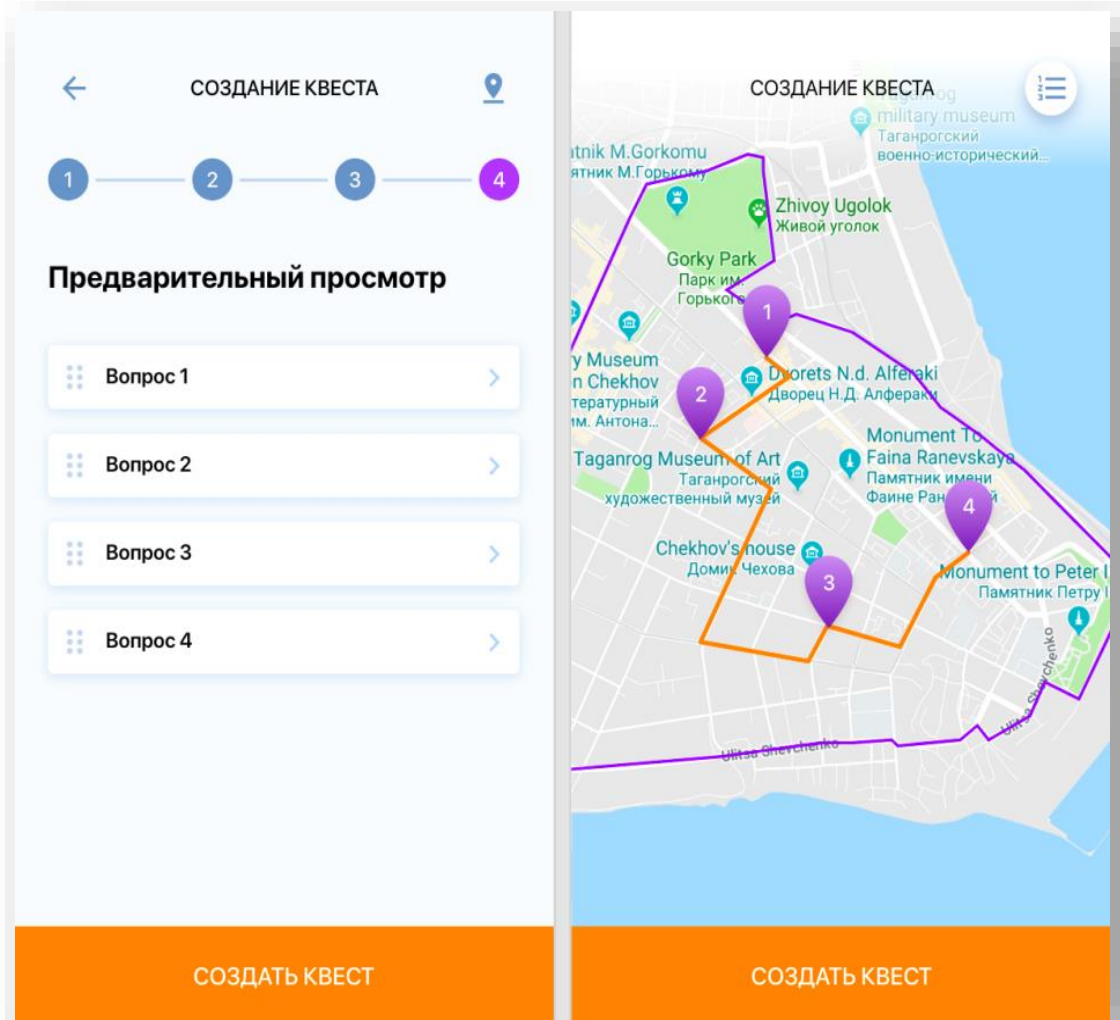
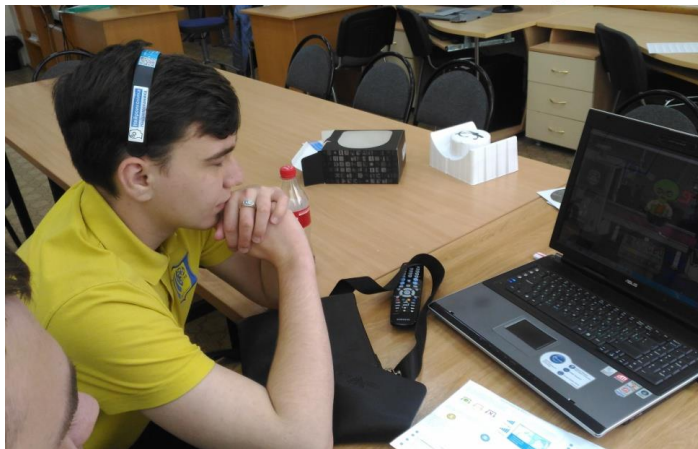


At the layout level, we are talking about detailed documentation of each of the screen forms prototypes of the product.

We use the Adobe Experience Design tools, as well as the GOMS method, which allows us to place interface elements in such a way that the user achieves the goal in the minimum time



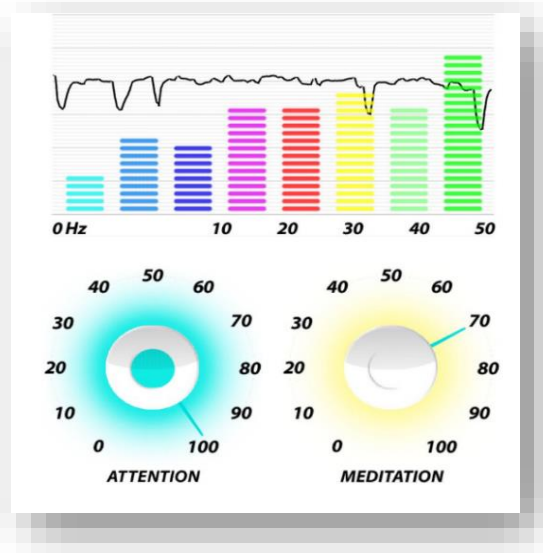
The surface level



At the last level of the surface, the visual design of the elements' logical order, the color design of the prototype, the addition of decorative elements, navigation and information icons are implemented.

Adobe Experience Design is also used as a design tool

Research activity



In addition, to assess ergonomics and improve the quality of the product further, oculography methods are used, as well as the method of electroencephalography, which with the help of a neuro headset allows you to get two indicators - the level of concentration of attention (Attention) and the level of relaxation (Meditation).

Using the method of oculography or eye tracking allows you to get a heat map of the user gaze and determine the points of the interface on which the user's attention was focused for the longest time. This allows, for example, to identify the presence of distractors, elements that distract the user's attention from the main task.

IT tracking use allows you to make the interface as intuitive and convenient as possible.

Conclusion

1. As a result of the performed work, the practical significance of the Garrett system of elements as a visual tool for teaching the classical UX process is confirmed.
2. The proposed methods have been tested in the educational process of the master's program "User Interface Ergodesign" since 2015.
3. And the master's program itself demonstrates high performance indicators.
4. On the whole, the program is unique and interesting both for applicants (this year the third set for the program has already been successfully completed) and for specialized IT companies (the number of such partner enterprises has grown to 18 this year).
5. In addition, according to statistics, 100% of the graduates of the program were employed.

Contacts

- Kompaniets Vitaly
+79043461168, kompaniets@sfedu.ru
<https://vk.com/v.s.kompaniets>
- Institute of computer technology and
Information security SFedU
<http://ictis.sfedu.ru/>
- Our master`s program
[https://vk.com/ergodesign ui](https://vk.com/ergodesign_ui)

