

Artificial Intelligence Systems

May 2023

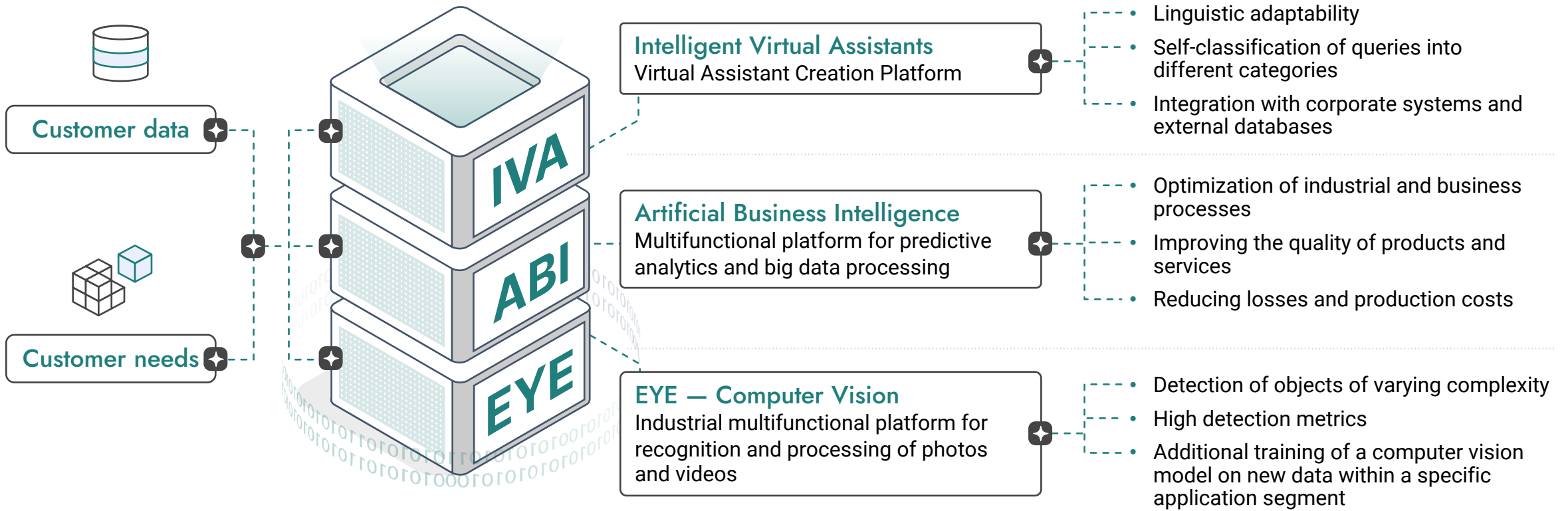


What we?

Unified AI system

Who are we?

AI Systems



Multiple increase in key indicators of the customer's business

Direct and DSaaS integration

Possibility to implement the whole system or individual modules

End-to-end platform solutions for every industry

Industry	IVA — Intelligent Virtual Assistants	ABI — Artificial Business Intelligence	EYE — Computer Vision
Energy & Environment	ABI & IVA Smart Search Assistant	Smart City Platform — Electricity, Gas, Water & District Heating Smart Digital Twin	Smart City — Process Safety Control System
Manufacturing & Engineering	Anti-Counterfeiting	Automatic Cracks Detection System-Band Saw	Defect Detection
Digital Retail	Wholesale & Retail	NLP — Engine for Smart Shopping	Smart Shopping
Financial Markets	Insurance	Multimodal Learning	OCR
Travel & Hospitality	Smart Calling	Historic Figure Reconstruction	Face Recognition System
Agro AI	Voice Monitoring Systems Management	Smart Farming — Intelligent Agro-Forecasting Platform	Smart Farming — Intelligent Agricultural Cycle Control Systems
Banking AI	Auto-Debt-Caller	Sentiment Analysis	Customer Behavior Analysis
Digital HealthCare	Medical	Smart Clinic Platform — CDSS Neuro-Scanner-RD (Rare Diseases)	Smart Clinic Platform — CDSS Neuro-Imager
Self-Driving Vehicles	Voice Monitoring Systems Management	Smart City — Intelligent Traffic Management System	Smart City — e-Bus & ITS
Government Administration	An affordable personal assistant for every citizen	Elections	IDSS- Consumer Goods Turnover Notifier
Natural Resources	QnA Maker	IDSS — Anomaly Detection System over Big City Data Flows	Intelligent Waste Management Systems

A ready portfolio of ai solutions for any industries

AI Media Systems

Solution	Short description	Implementation Benefits
Intelligent Virtual Assistant for interaction with users	AI instantly solves user questions: payment for services, subscription information. Setting up scenarios – in a convenient interface	Growth of referral invitations to the product up to 50% among loyal users
Intelligent Virtual Assistant for company HR services	AI provides HR services to employees within minutes: vacation bookings, payroll information, and more	- Increasing employee satisfaction with the workplace - Increasing the speed of providing HR-services
Intelligent content moderation	AI instantly detects illegal content: nudity, weapons, etc. Moderation of any duration in a few minutes – online and offline	- Reducing the risk of prohibited content leaking into services - Reducing the cost of content moderators up to 50%
Intelligent system for face recognition of actors while watching movies	AI shows information about the actor and offers to watch more films with the participation of the selected actor inside the service	Growing product indicators: LTV, Monthly recurring revenue, Retention-rate
Intelligent recommendation system for movie selections	AI analyzes a large amount of information about the users of the streaming service and issues recommendations – the selection of optimal content for each	- Increasing the number of active users of services - Increasing the number of views per 1 user



Our AI-based solutions provide technology leadership in advanced analytics and AI-powered recommender systems

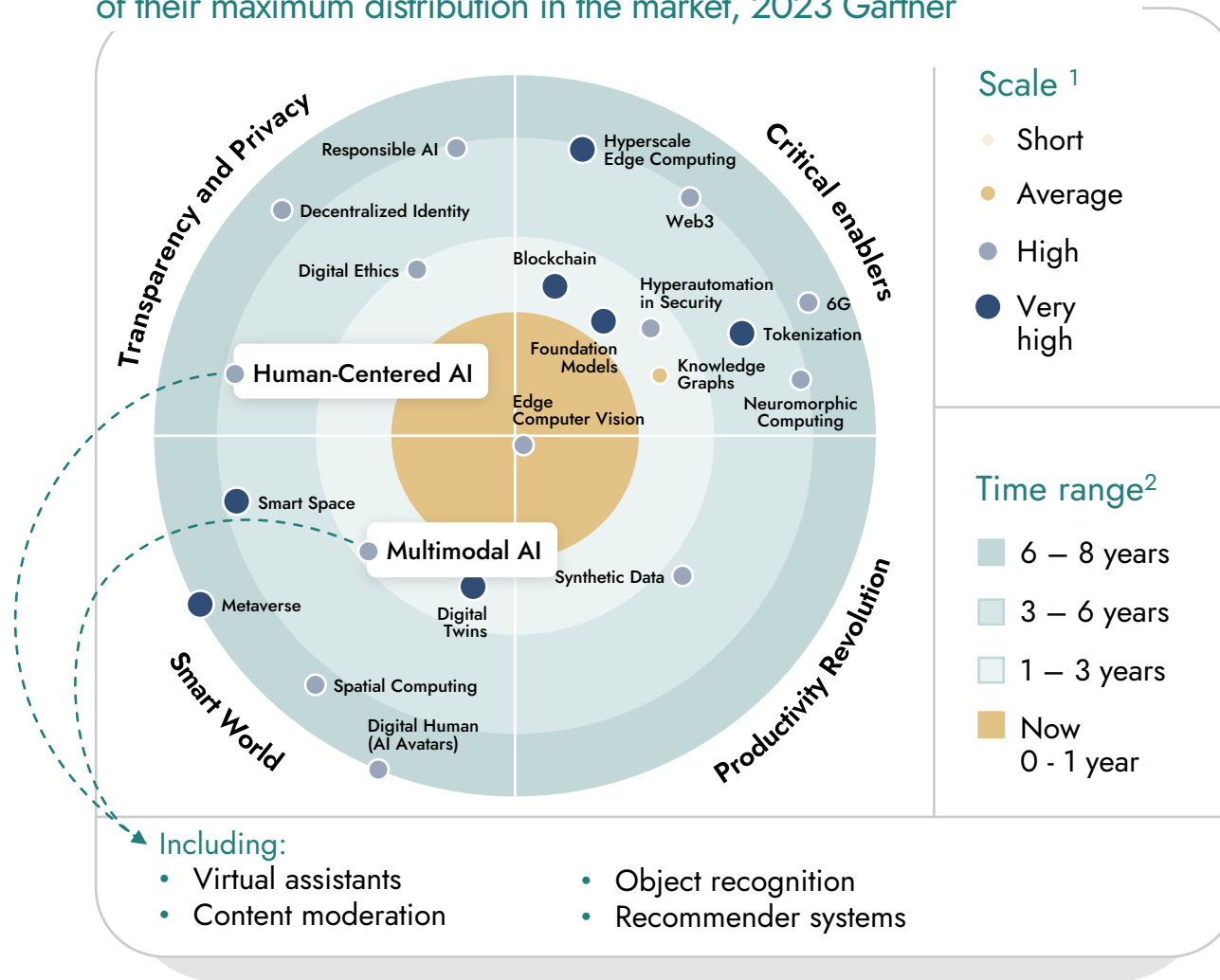


**Artificial intelligence
for company development**



General review

Map of new technology trends and the time range of their maximum distribution in the market, 2023 Gartner



Technology trends and the role of AI

Market participants are once again seeing the impact of AI on business and what competitive advantages it provides. A special surge of interest occurred after the sensational ChatGPT

The widespread replacement of people with AI is a new reality

For example:

Netflix began to use AI to create anime without the help of people ¹

IBM will stop hiring employees whose functions can be performed by AI, said the head of the company Arvind Krishna ²

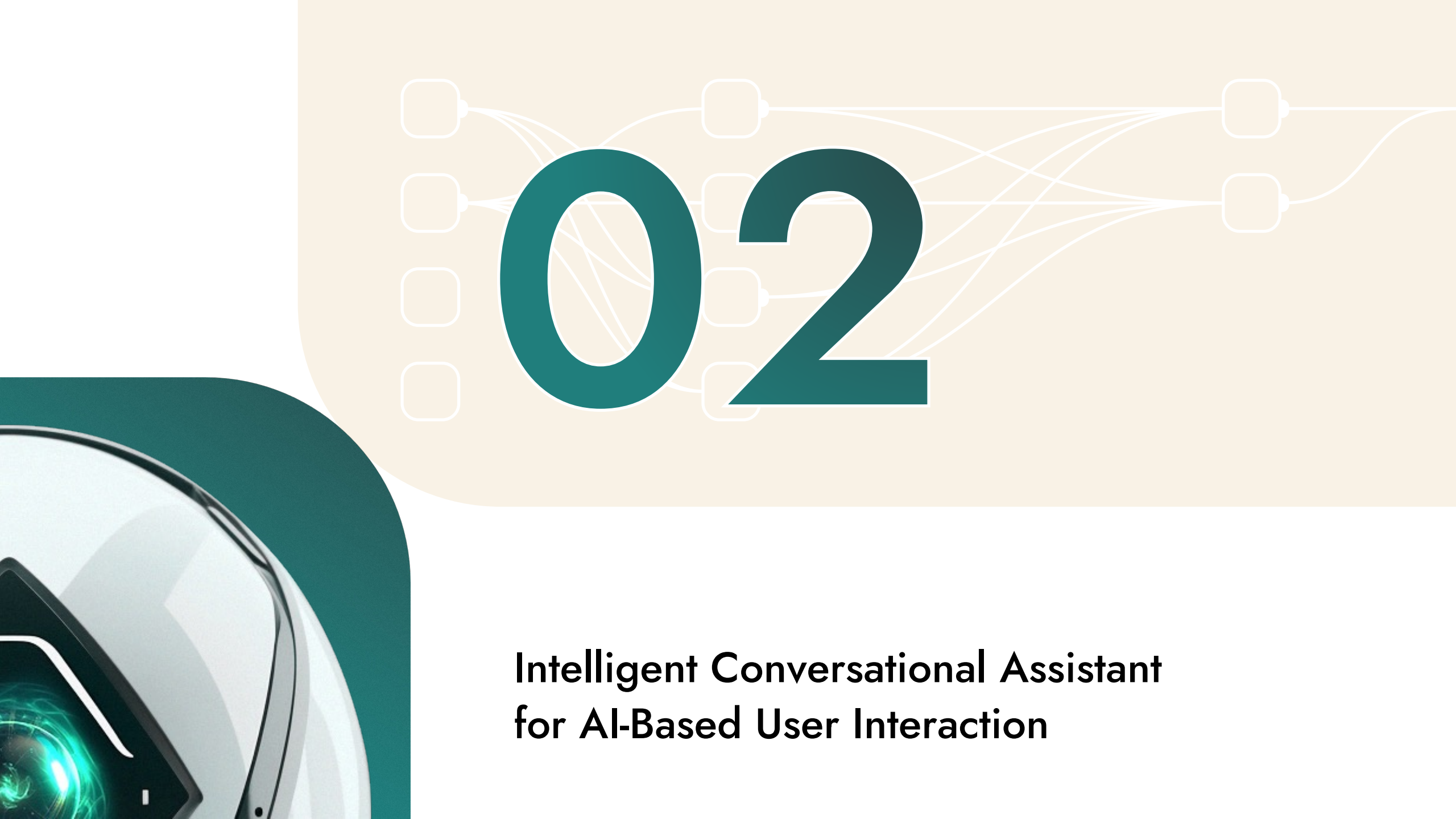
The introduction of domestic AI in business distinguishes the company from competitors, among other advantages of technology

¹ – Number of years before technology becomes mainstream

² – Насколько существенным будет влияние технологии на рынок

³ – Futurism, 2023

⁴ – Forbes, 2023



02

**Intelligent Conversational Assistant
for AI-Based User Interaction**

Intelligent user interaction assistant for a positive user experience

Description

AI integrated into any text and voice communication channel with users, answers questions, collects feedback, sends payment links

Compound

- AI
- NLP models
- Convenient interface
- No-code script editor

Target use of the assistant when interacting with users

DIGITAL
PLATFORMS

ADVERTISING
BUSINESS

ONLINE
TV

Эффекты

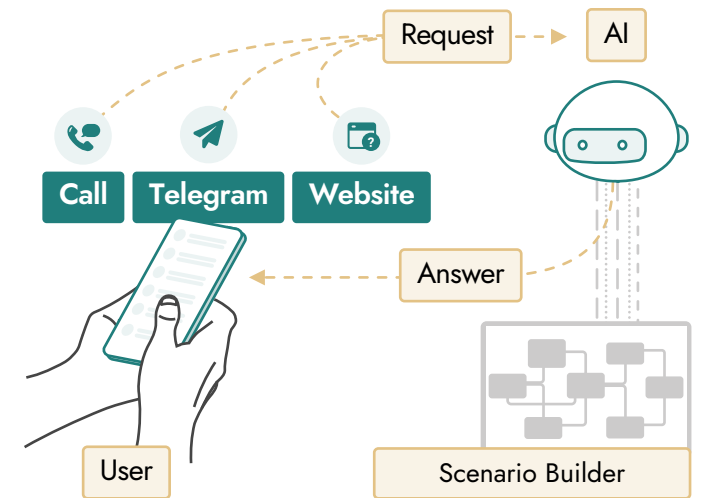


User Experience
Improvement

up to 50%

Growth of referral invitations to the product
among loyal users

Principle of operation



Functionality

- Unlimited Scenarios
- Integration with EDI systems, database, CRM
- Integration with messengers, websites
- Less than 30 seconds to answer by voice and text, 24/7

AI develops user experience and processes requests better than a low-paid support operator or a primitive bot

User scenario example 1

A user wants to know what payment method they can subscribe to a streaming service

A likely scenario without the use of AI

The user decides not to understand the issue, since mail is long, complicated and not customer-oriented

For example, the "Help" section on the site leads to the email "help@service.ru"

Lost customer

The user decides to write to the Telegram bot

How can I pay for a subscription?

Bot / Moderator Replies

19 min.

Hello, card only

The client waited a long time for an answer, did not receive payment options, payment links and special offers

Target scenario when using AI

The user accesses the AI assistant directly on the site

How can I pay for a subscription?

up to 15 sec.

AI assistant responds

Hello! Here are the most convenient options [link 1](#), [link 2](#)

We give you a promo code for a discount

Valid for 10 minutes

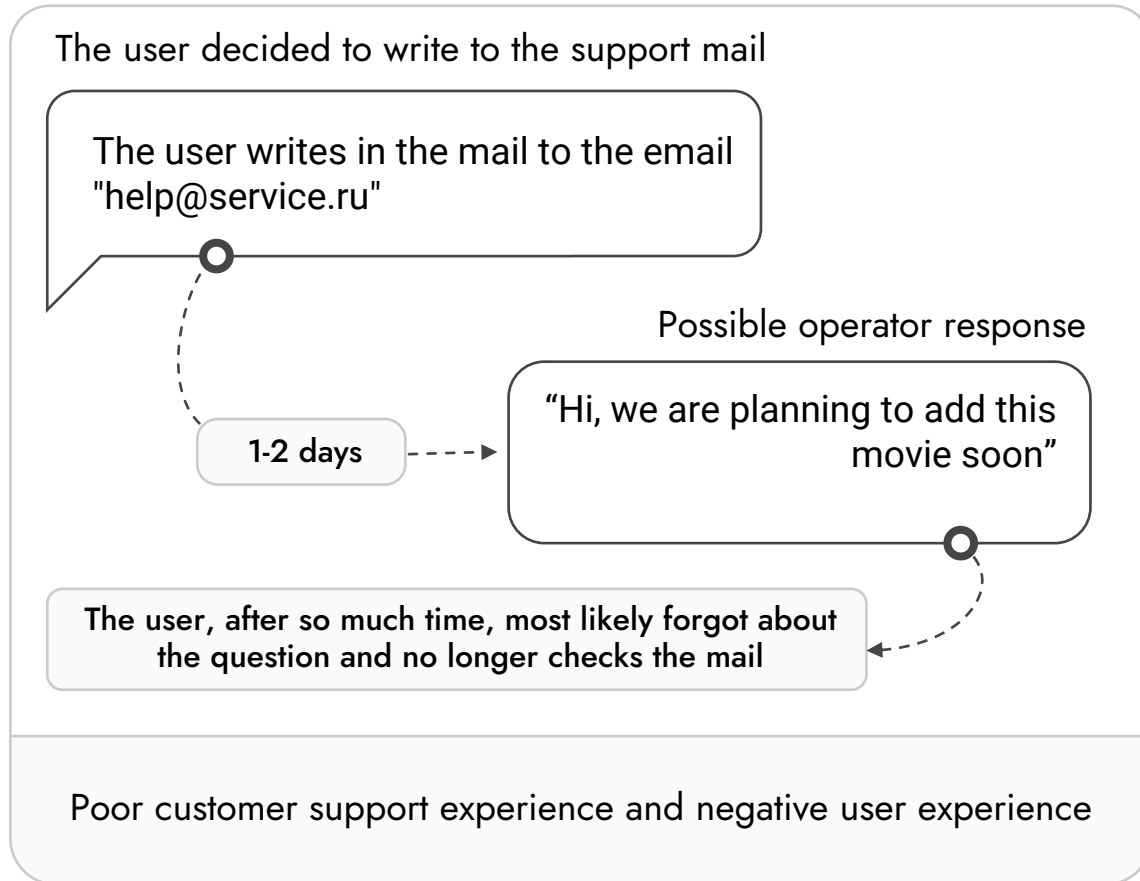
The client received a solution instantly, as well as an additional discount, he can recommend the service to others

The operator is not able, like AI, to solve user questions in any window, to answer instantly and always "squeeze"

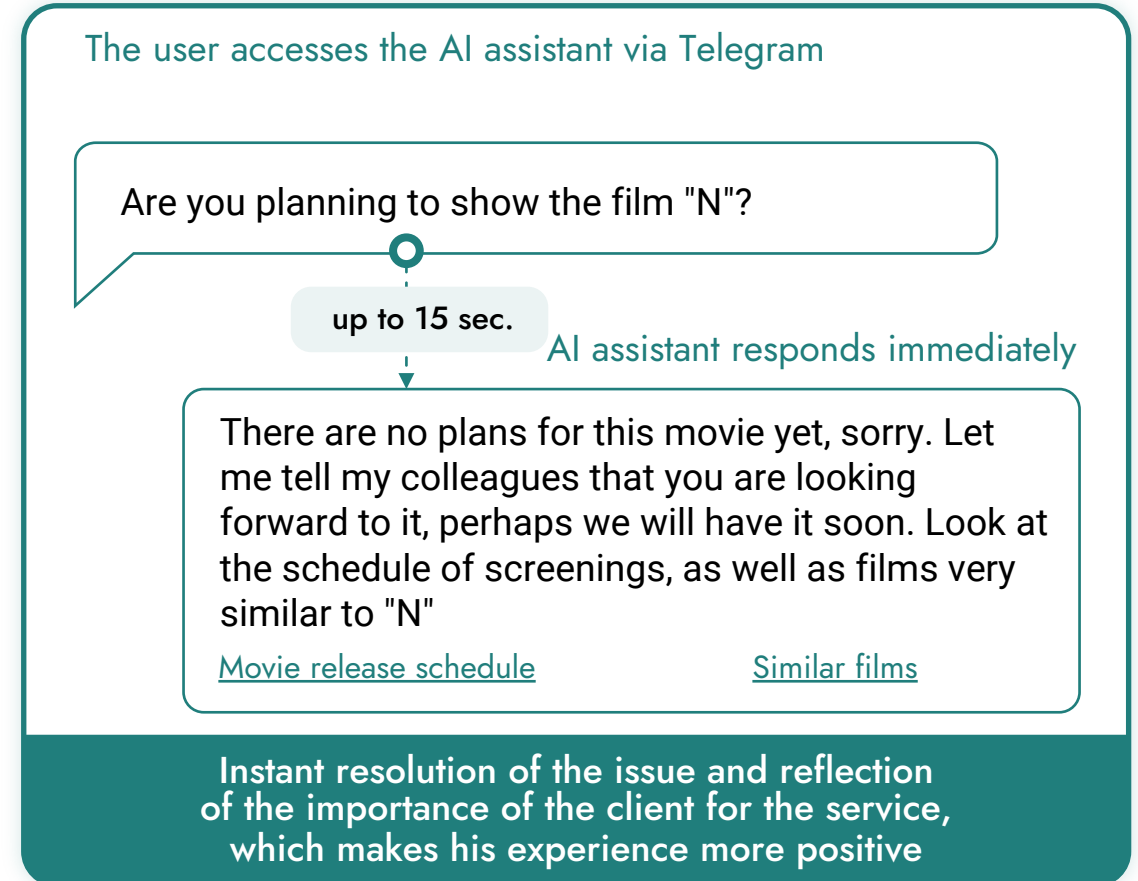
User scenario example 2

The user wants to know about the release of a new movie in the streaming service

A likely scenario without the use of AI



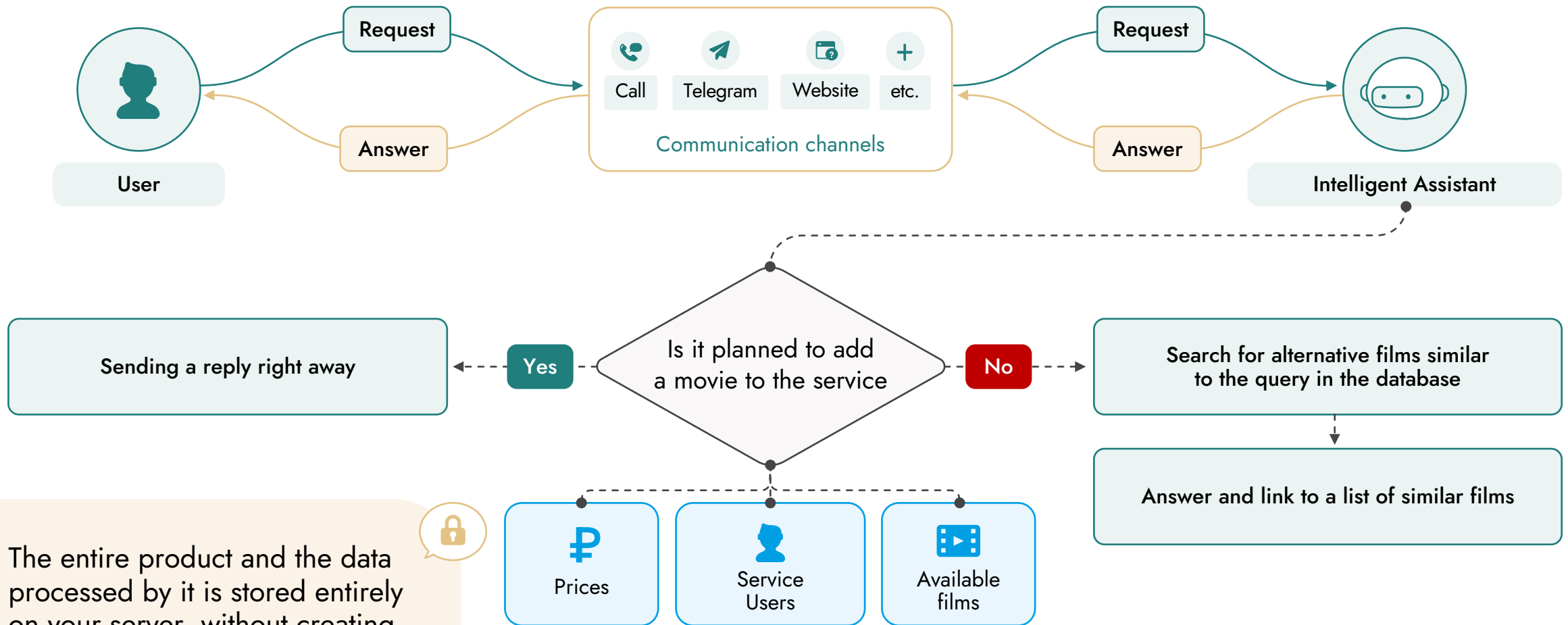
Target scenario when using AI



There are even more user scenarios where AI will be multiple times better than a human or a bot

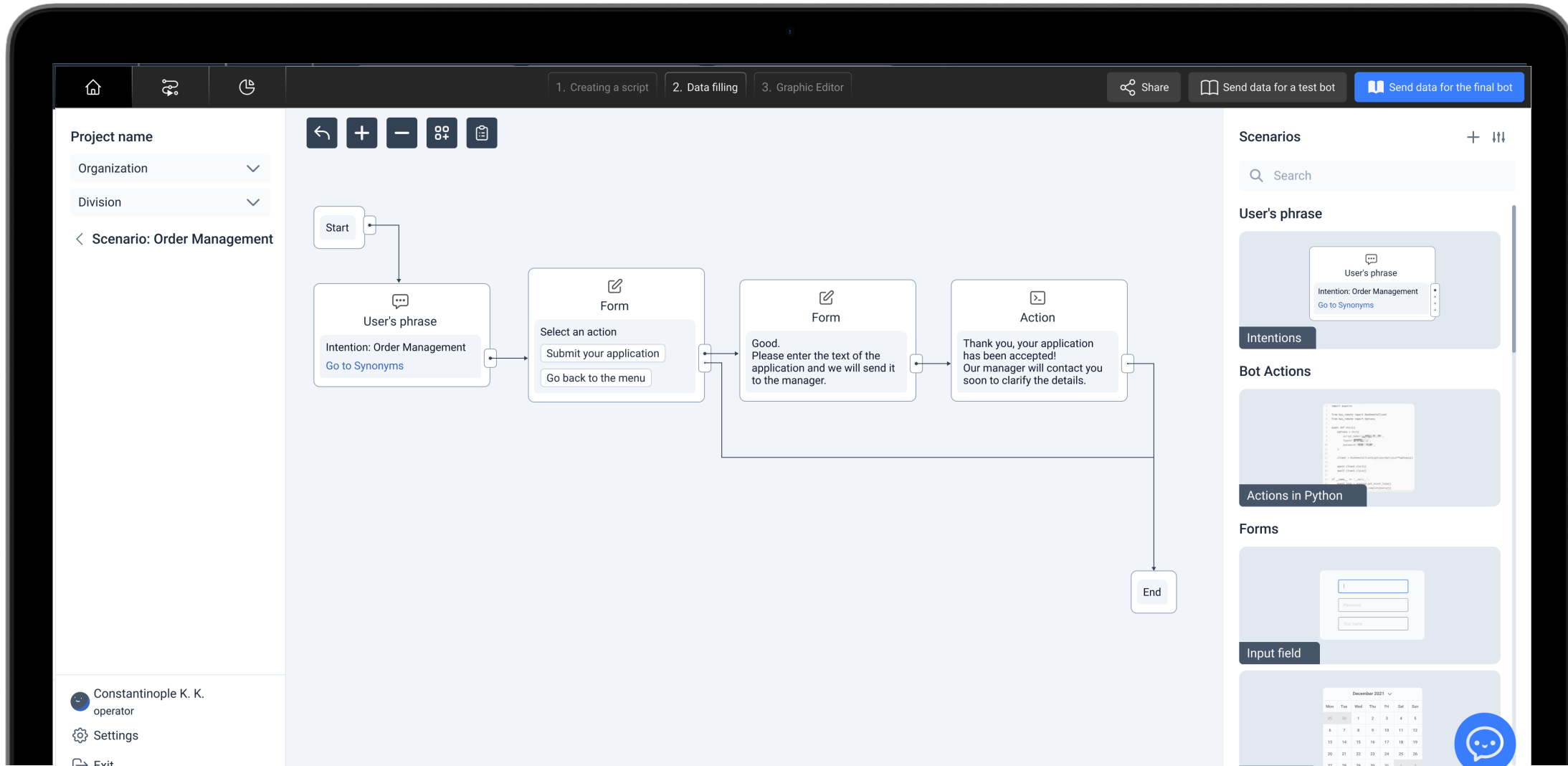
Business process of customer's scenarios

Simplified business process diagram for user interaction with AI "About the release of the film" N "in the service"



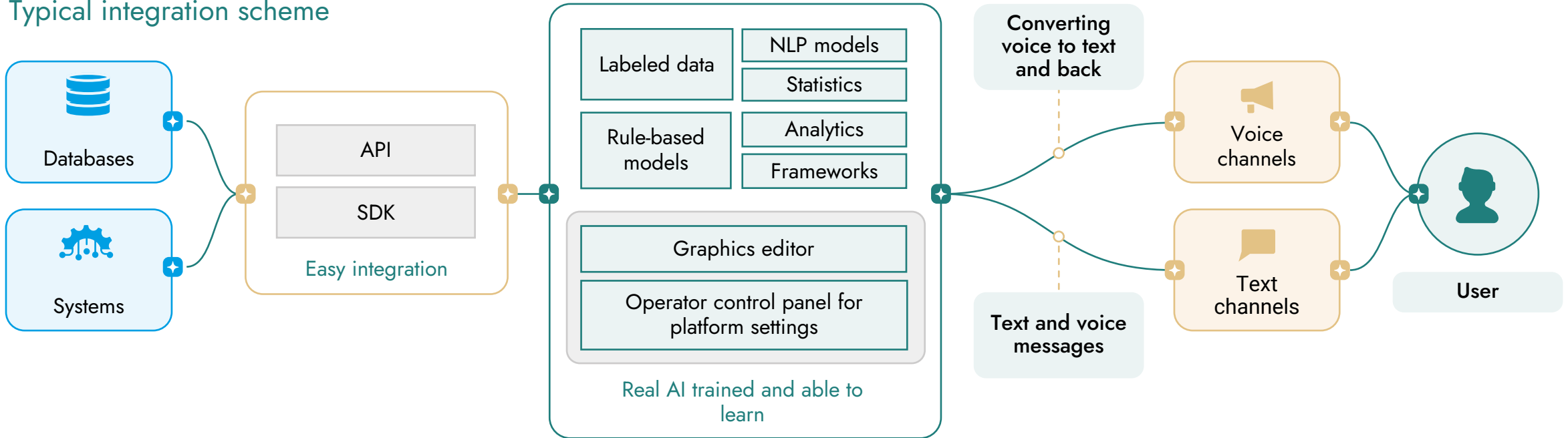
The entire product and the data processed by it is stored entirely on your server, without creating any additional cyber threats.

Management and configuration of the intelligent assistant takes place in a convenient interface that does not require programming skills



We seamlessly integrate the solution into the IT landscape via API and SDK

Typical integration scheme



The solution can be integrated with the following systems

1. Integration with electronic document management systems to ensure the automatic generation of documents based on the data entered by the user in the digital assistant, as well as the coordination of requests / documents from the coordinating persons
2. Integration with CRM systems to ensure the receipt and recording of the necessary data
3. Integration with user authorization systems (for example, MS Active Directory) to ensure user authorization in the system and establish his role
4. Integration, if necessary, with ERP-, MES-systems to obtain data from them (for example, the time and performance of the operator)
5. Telephony Integration
6. Integration with messengers (both popular Telegram, Express, and others on request)
7. Integration with separate databases for obtaining and entering information

A decorative graphic featuring the large, bold, dark teal number '03' centered on a light beige background. Surrounding the number is a network diagram consisting of several small, rounded square nodes connected by thin, white, curved lines. The nodes are arranged in a way that suggests a complex, interconnected system or data flow.

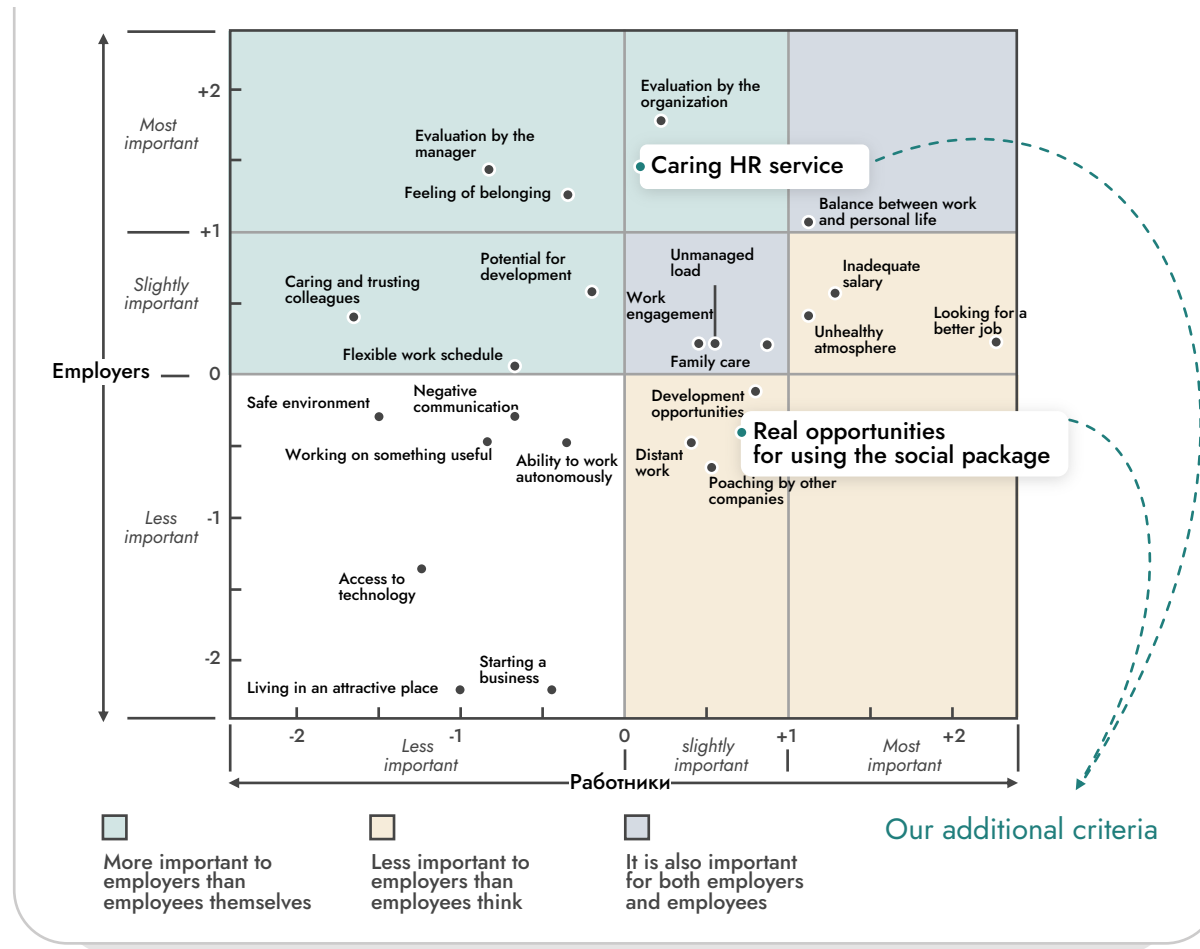
03

A decorative graphic in the bottom-left corner showing a close-up of a futuristic, white and grey helmet. The helmet has a glowing green light source visible through its visor, creating a sense of advanced technology and artificial intelligence.

**Intelligent conversational assistant
for AI-based HR services**

In addition to taking care of users, it is also necessary to create convenient services for your employees, for example, in the field of HR services

What criteria employers and employees value most in working conditions ¹



Ways to influence employee satisfaction

- Provide the employee with the possibility of a flexible work schedule, incl. remote work mode
- Celebrate the employee's contribution to the development of the company
- Provide an employee with a market and higher salary
- Giving tools for development: training, etc.
- Provide the employee with convenient systems and HR services within the company: booking a workplace in open-space, ordering stationery and passes, vacation planning, searching for colleagues
- Ensure an optimal work-life balance for the employee

Implementation of AI-powered HR service delivery tools boosts employee satisfaction with their workplace

¹ —data from McKinsey & Company Research, 2021

Intelligent HR Service Delivery Assistant for Employee Experience

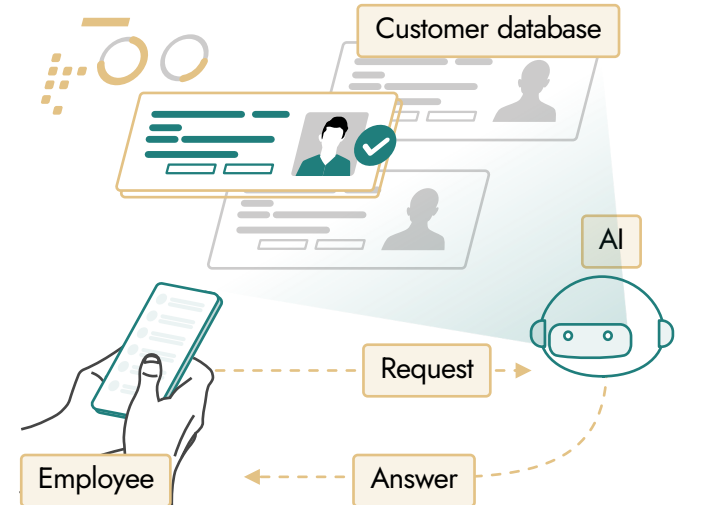
Description

A dialogue window between an employee and a business in any form - a call, a messenger, a portal, a website. An employee can request information about the work schedule on holidays, book a vacation, where the AI will instantly process the request. Business can customize any of its own scenarios and opportunities for requests for HR services

Compound

- AI
- NLP models
- Convenient interface
- No-code script editor

Principle of operation



Target use of the assistant when interacting with users

All types of businesses and types of workers, from field workers, on-site workers, to office and remote workers

Effects



Increasing employee job satisfaction

↗ в 2 раза

Increasing the speed of providing HR services



Releasing a HR Department Resources

Functionality

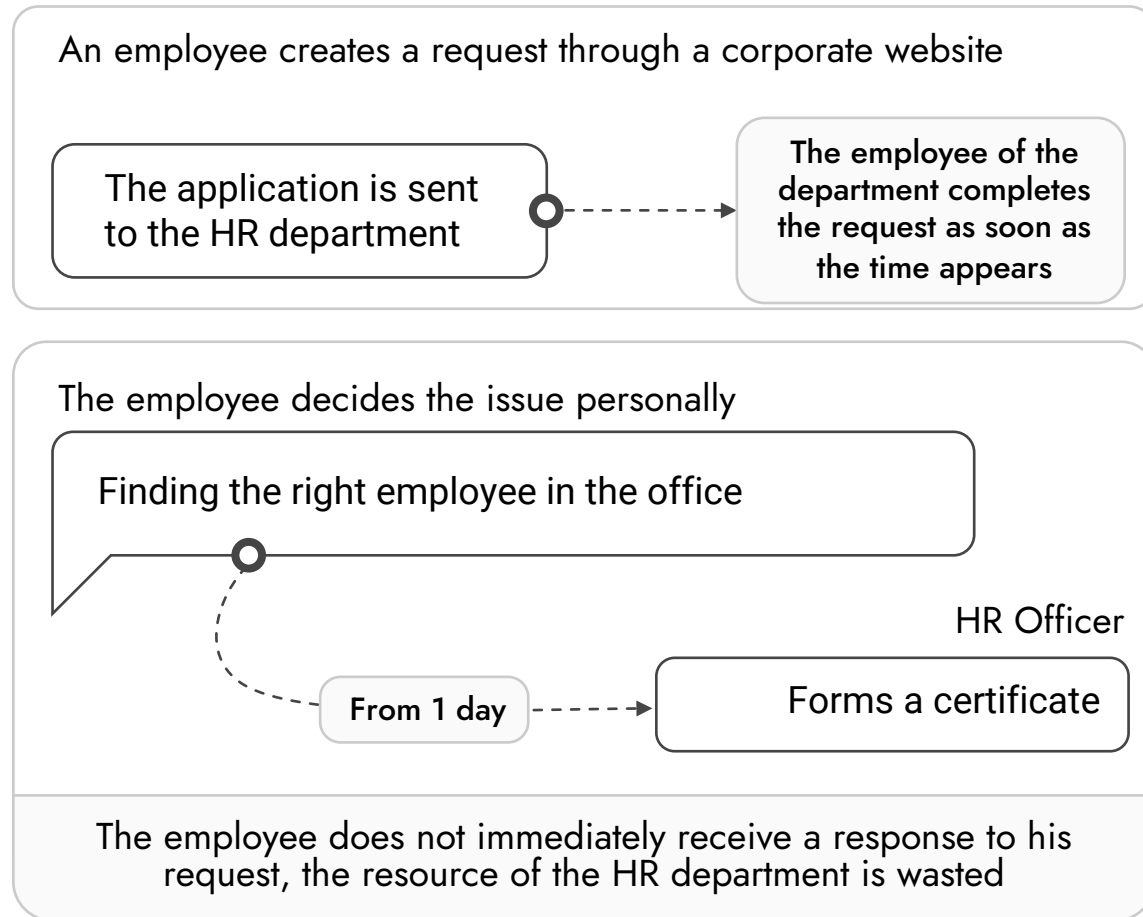
- Unlimited Scenarios
- Integration with EDI systems, database, CRM
- Integration with messengers, websites
- Less than 30 seconds to answer by voice and text, 24/7

In HR processes, there are a huge number of use cases for AI to process employee requests in a quality manner faster than the HR department can do.

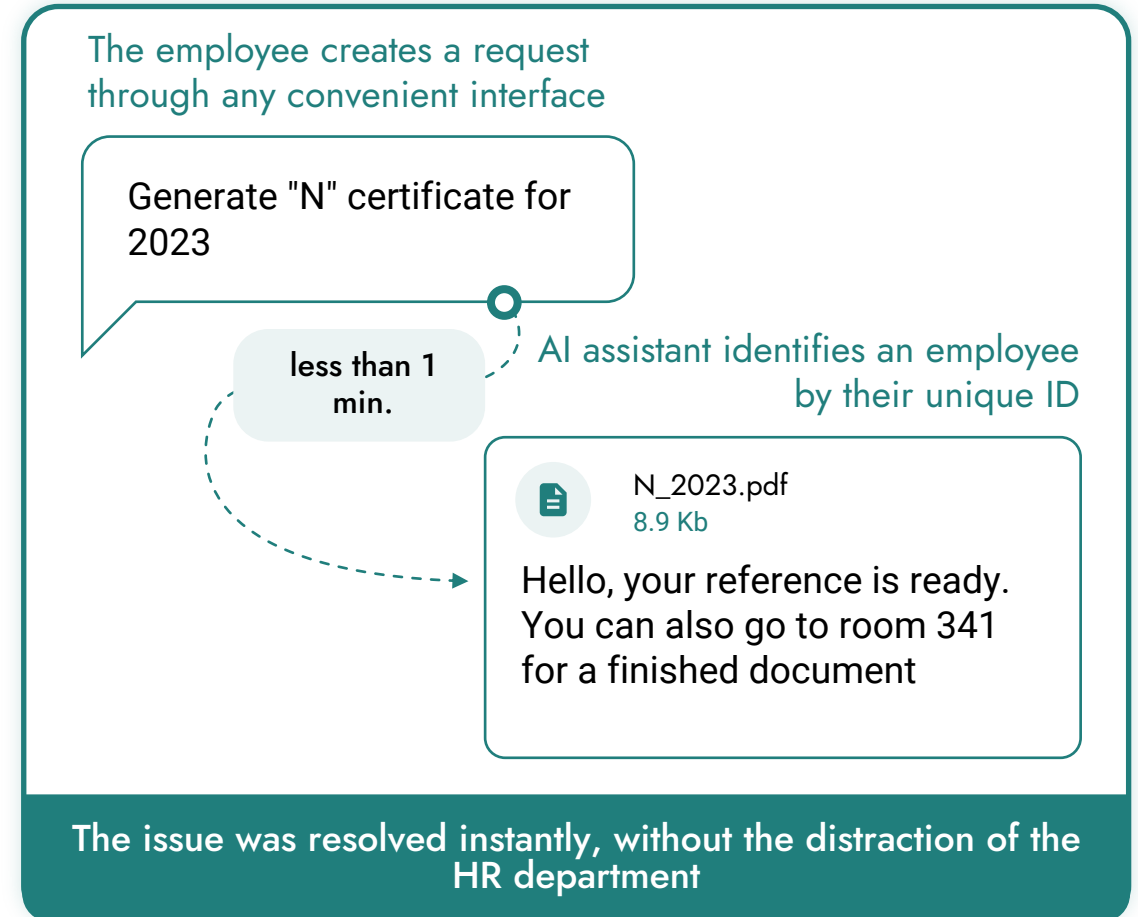
Custom scenario example 3

The employee wants to order a certificate

A likely scenario without the use of AI



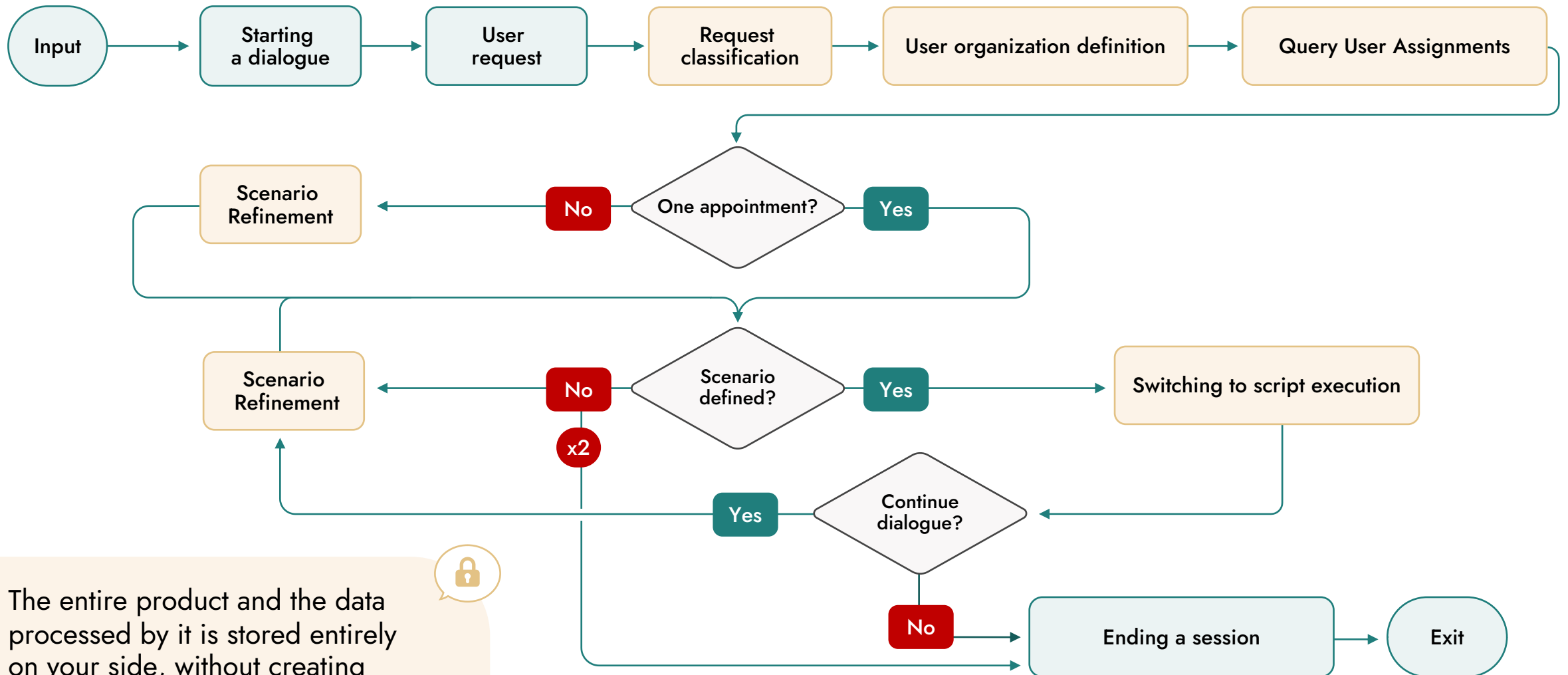
Target scenario when using AI



The HR department is not able, like AI, to instantly provide HR services to employees in any dialog interface and 24/7

Business process of customer's scenarios

A simplified diagram of a business process when an employee interacts with AI "Informing about the rest of the vacation"



The entire product and the data processed by it is stored entirely on your side, without creating any additional cyber threats.



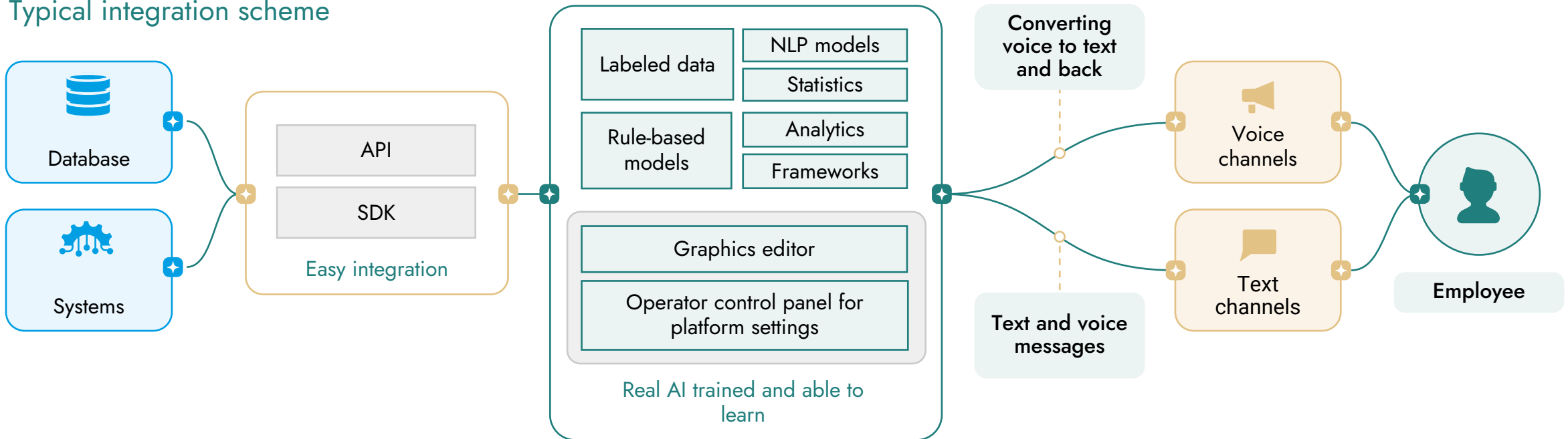
Management and configuration of the intelligent assistant of HR services takes place in a convenient interface that does not require programming skills

The screenshot displays a user interface for configuring an intelligent assistant for HR services. The interface is divided into several sections:

- Top Bar:** Contains navigation icons (home, undo, redo) and tabs for '1. Creating a script', '2. Data filling', and '3. Graphic Editor'. It also includes 'Share', 'Send data for a test bot', and 'Send data for the final bot' buttons.
- Left Panel:** Shows 'Project name' and 'Organization' dropdowns. Below, it indicates the current 'Scenario: Vacation'.
- Main Canvas:** Displays a flowchart for the 'Vacation' scenario. The flow starts with a 'Start' node, leading to a 'User's phrase' node (Intention: to go on vacation, Go to Synonyms). This leads to a 'Form' node (Choosing the type of vacation: At your own expense, Medical, Annual). The flow then goes to a 'Calendar' node (Select dates). From the 'Calendar' node, the flow splits into two paths: one leading to an 'Action' node (Sending an application for approval) and another leading to a 'Form' node (Confirmation of the selected parameters: Confirm, Change). Both paths converge and lead to another 'Form' node (End of the session: The issue is resolved, Solve another issue). The flowchart includes various icons for adding, deleting, and editing elements.
- Right Panel:** Contains several configuration panels:
 - Scenarios:** A search bar and a list of scenarios.
 - User's phrase:** A panel showing the 'User's phrase' node with its intention and synonyms.
 - Bot Actions:** A panel showing a list of actions, including 'Actions in Python'.
 - Forms:** A panel showing a list of forms, including 'Input field' and 'Calendar'.
- Bottom Left:** Shows the user's name 'Constantinople K. K. operator' and buttons for 'Settings' and 'Exit'.

We also easily integrate the solution into the IT landscape via API and SDK

Typical integration scheme



The solution can be integrated with the following systems

1. Integration with electronic document management systems to ensure the automatic generation of documents based on the data entered by the user in the digital assistant, as well as the coordination of requests / documents from the coordinating persons
2. Integration with CRM systems to ensure the receipt and recording of the necessary data
3. Integration with user authorization systems (for example, MS Active Directory) to ensure user authorization in the system and establish his role
4. Integration, if necessary, with ERP-, MES-systems to obtain data from them (for example, the time and performance of the operator)
5. Telephony Integration
6. Integration with messengers (both popular Telegram, Express, and others on request)
7. Integration with separate databases for obtaining and entering information

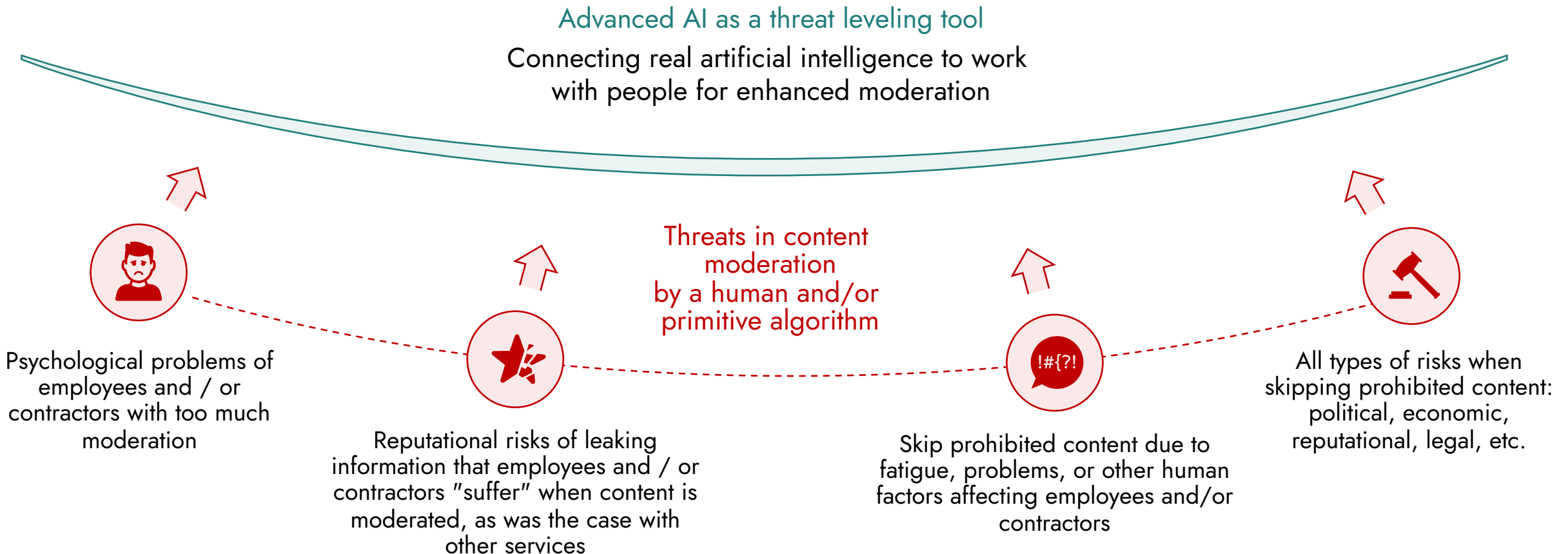


**Intelligent content
moderation based on AI**



The passage of prohibited content to streaming platforms is a significant problem that poses great threats to business

The human factor is one of the main reasons for skipping prohibited content



Intelligent content moderation based on AI for enhanced protection against the leakage of prohibited content

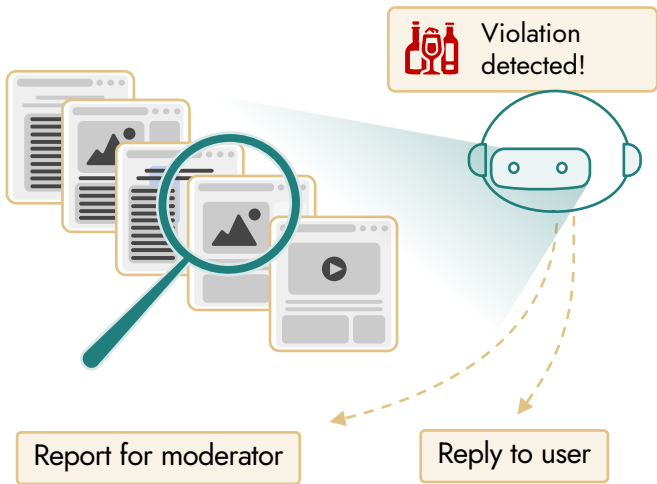
Description

Content moderation in an automated mode. The system automatically detects objects that violate the content policy, such as: nudity, weapons, drugs, etc. Also AI detects logos and symbols of terrorist organizations or brands associated with these organizations, has OCR to track topics of hatred or terrorism, disinformation

Compound

- AI
- NLP models
- Setting interface

Principle of operation



Target application of the solution when working with content

DIGITAL PLATFORMS	PRESS	PRODUCTION AND DISTRIBUTION OF CONTENT	ONLINE TV
ADVERTISING BUSINESS		RADIO	

Effects

Minimize the risks of seepage of prohibited materials

Checking watch materials in less than 1 minute

Functionality

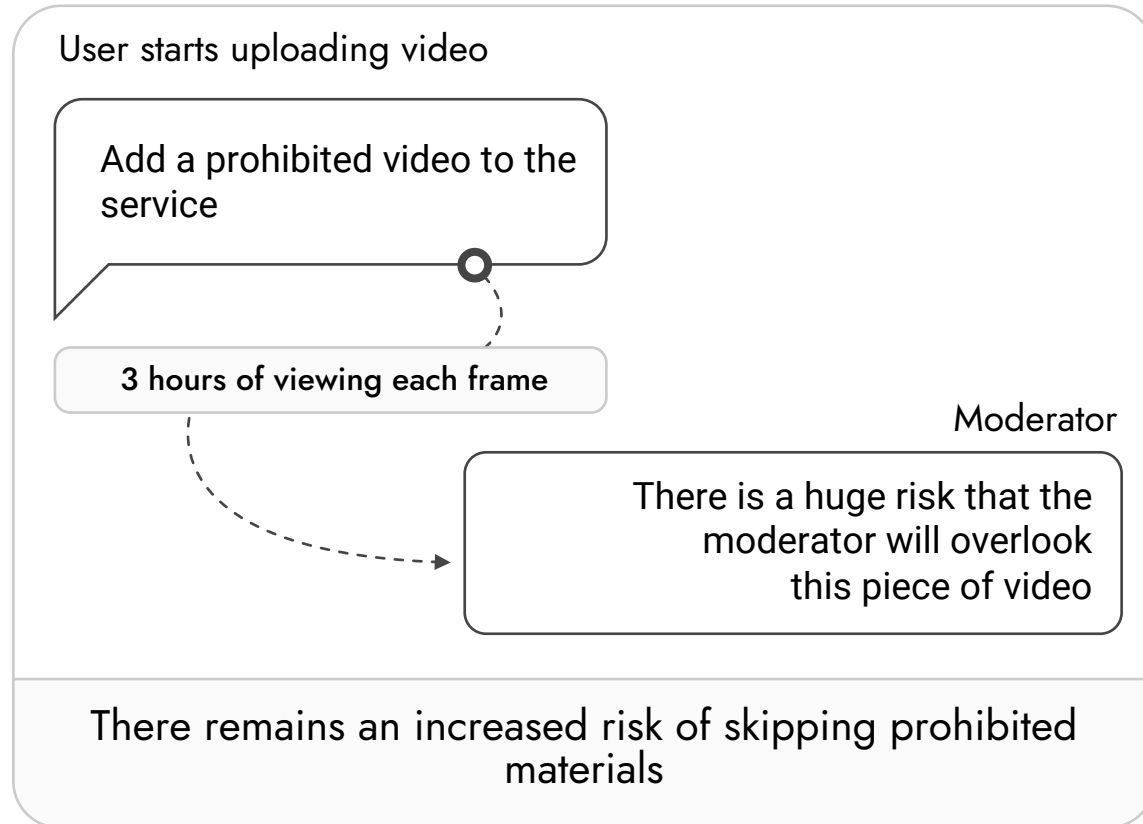
- Work both in real time in the mode of streaming video content, and for a database with video content
- Automated coverage of violations
- Speech to text translation, data storage and analysis

The implementation of the solution takes content moderation to a new level and provides maximum protection against threats

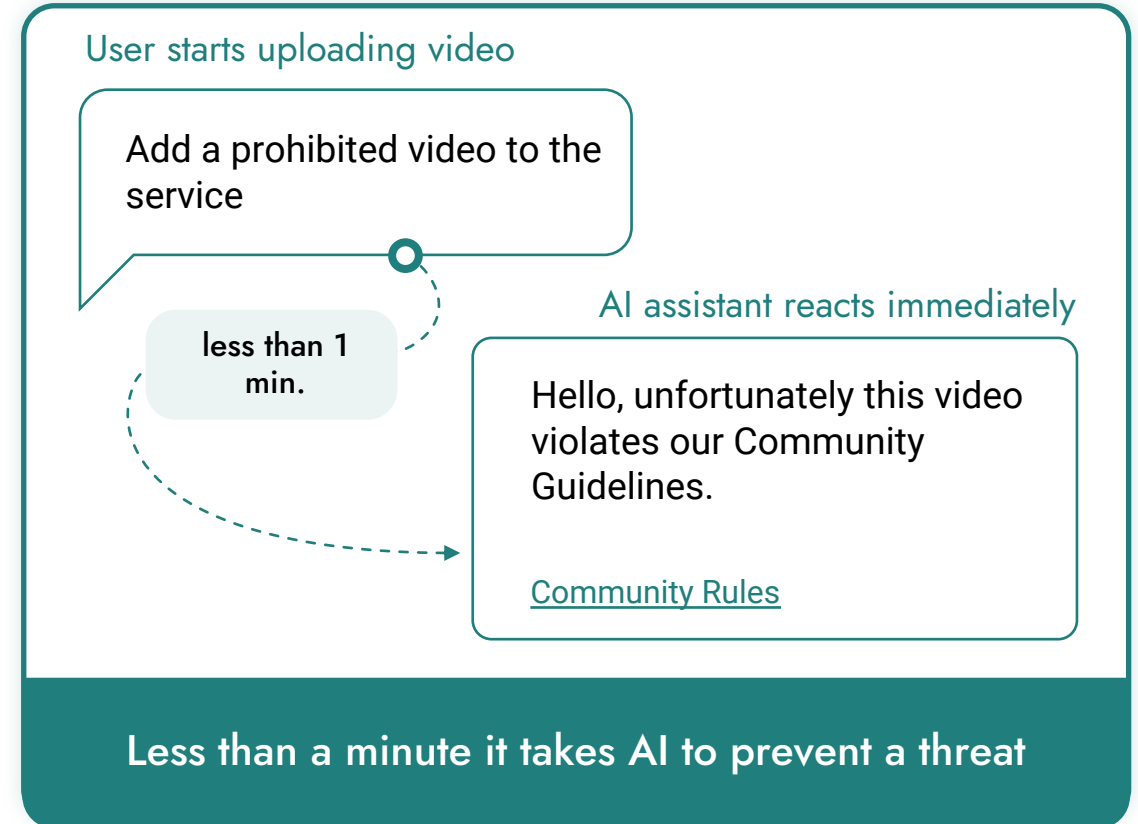
User scenario example 4

A user uploads a 3-hour video to a streaming service with a 5-second piece of nudity at the end

A likely scenario without the use of AI



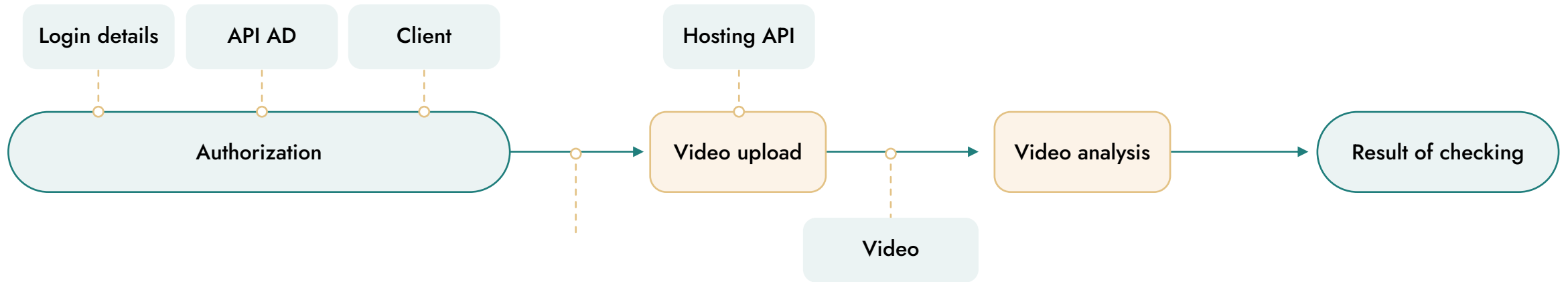
Target scenario when using AI



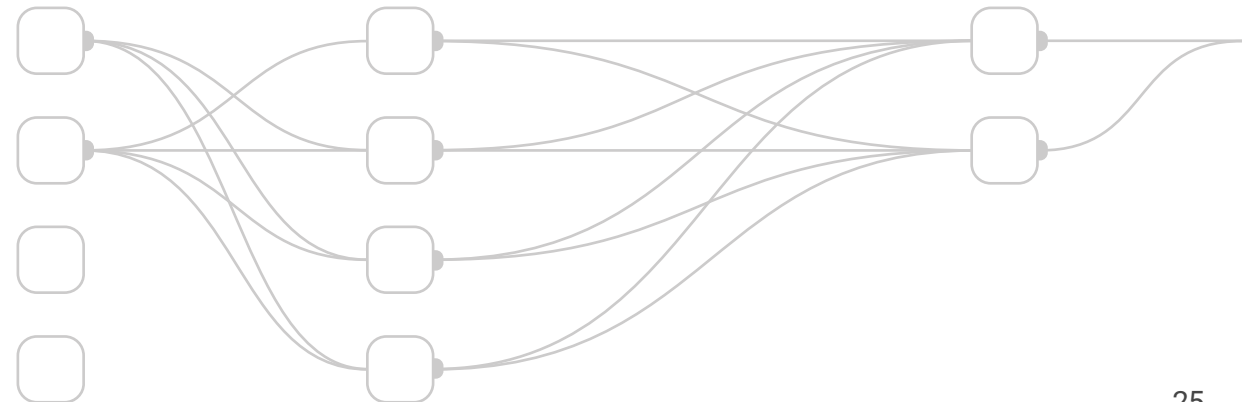
Moderators and primitive algorithms are not the way AI can instantly analyze hourly volumes of material and recognize threats 24/7

Business process of customer's scenarios

Simplified diagram of the business process "Moderation of downloadable content"

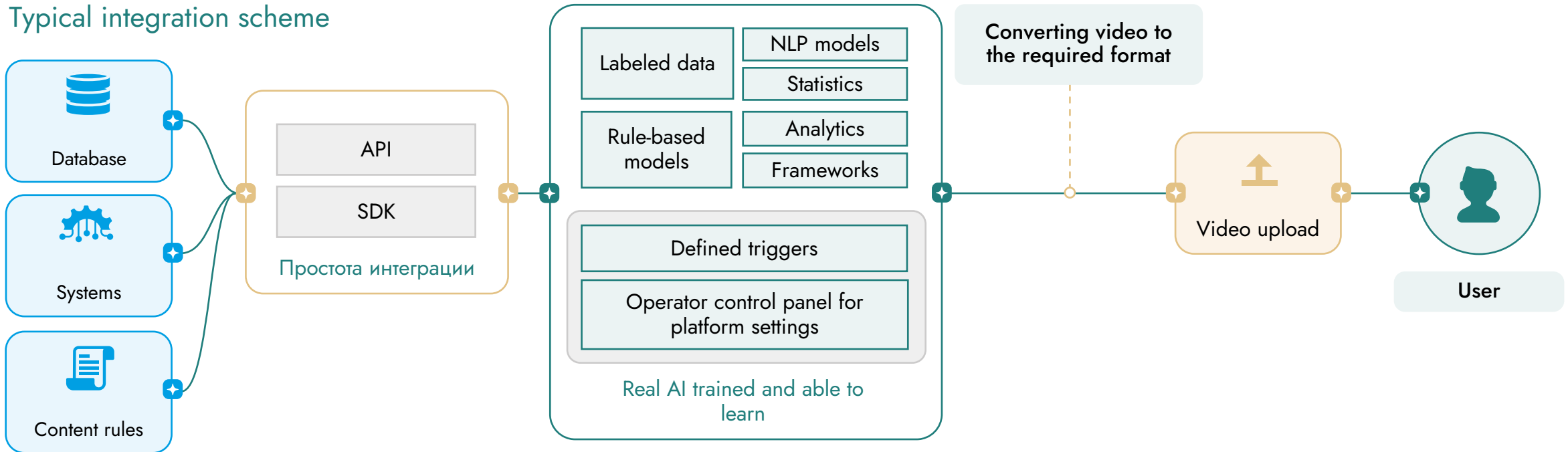


The entire product and the data processed by it is stored entirely on your server, without creating any additional cyber threats.



We seamlessly integrate the solution into the IT landscape via API and SDK

Typical integration scheme



The solution can be integrated with the following systems

1. Integration with CRM systems to ensure the receipt and recording of the necessary data
2. Integration with video content storage and processing system to ensure detection, recognition and modification of photo/video data
3. Integration with user authorization systems (for example, MS Active Directory) to ensure user authorization in the system and establish his role
4. Integration with SMS services, instant messengers and telephony, if necessary, to send an alarm to the system operator

The background features a light beige rounded rectangle containing a network diagram with white square nodes and connecting lines. To the left, a dark teal shape partially covers a futuristic white helmet with a glowing green visor. The large number '05' is centered in the beige area.

05

**Actor Face Recognition and AI-Based
Intelligent Recommendation System**

On the market of streaming platforms, there is an intensified struggle for the formation of the USP of the product that attracts users

Examples of USPs for streaming services

- Exclusive Content
- Exclusive self-produced content
- Sound and video quality
- Technologies in video: automated subtitling, automated simultaneous translation, face recognition of actors during a movie
- Omnichannel browsing
- Recommender system of selections to watch

Implementation examples

Service has learned to recognize the faces of characters in films and TV shows and report which actors play them ¹

The updated video player of another service now has automatic subtitles in the national language ²

One company introduced a new voice-over technology ³

1 – Comnews

2 – Fb

3 – Forbes

Intelligent actor face recognition system during the movie, as a USP to attract users

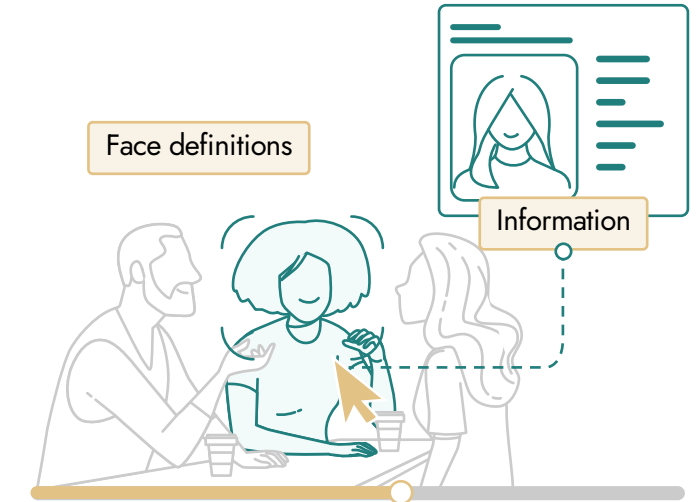
Description

When the user clicks on the actor's face during the film, the system displays information about the actor: name, brief information about the hero's filming in other films, a selection of films with the actor presented inside the service

Compound

- AI
- CV models
- DB of actors' faces

Principle of operation



Target application of the solution

BUSINESS OF DIGITAL PLATFORMS

Effects



Increasing the attractiveness of the service

Functionality

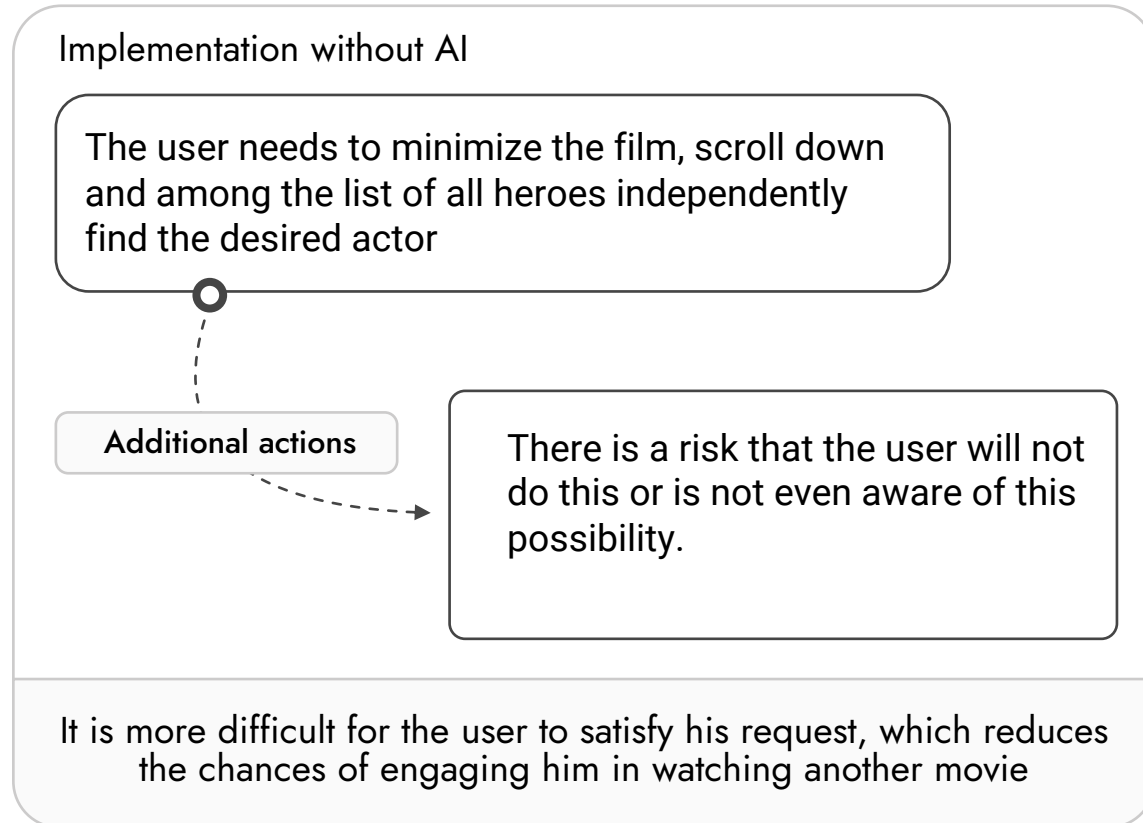
- Recognition of actors in films
- Issuing a brief information about the actor and the hero

The solution allows expanding the list of USPs for service users

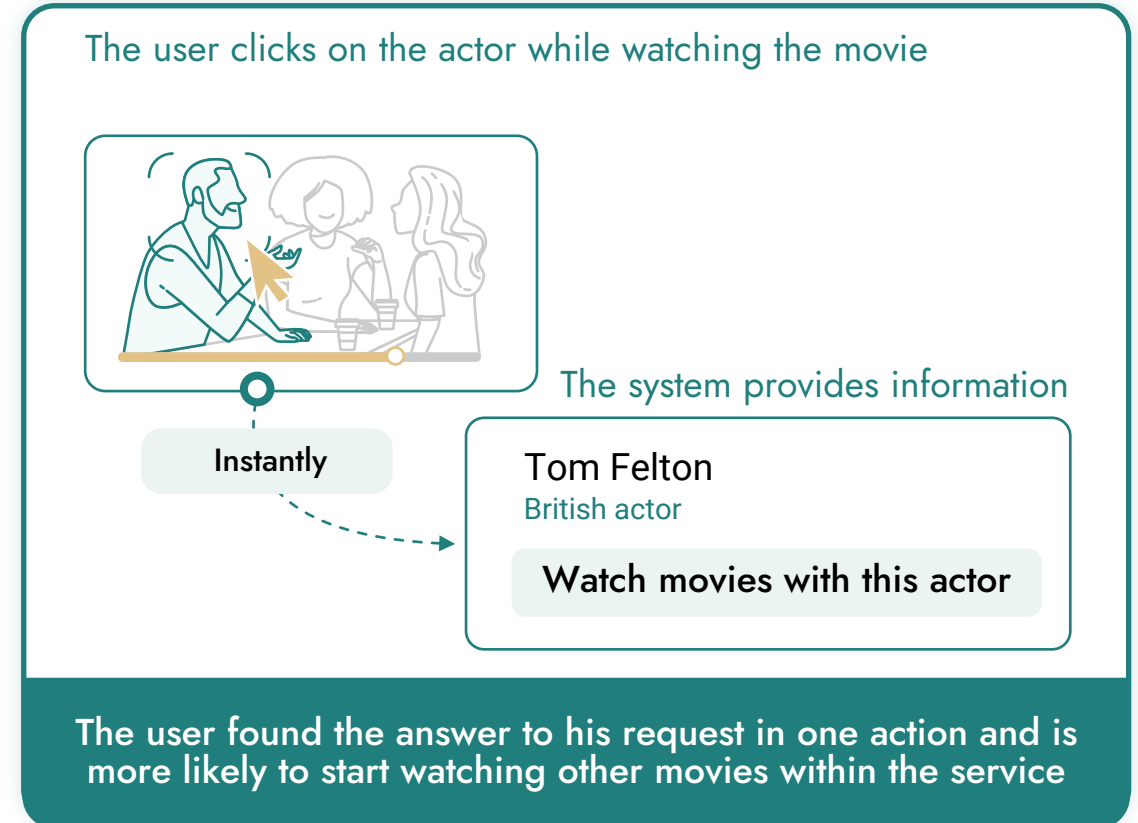
User scenario example 5

The user wanted to see more pictures with the main character of the movie "N" in the streaming service

A likely scenario without the use of AI



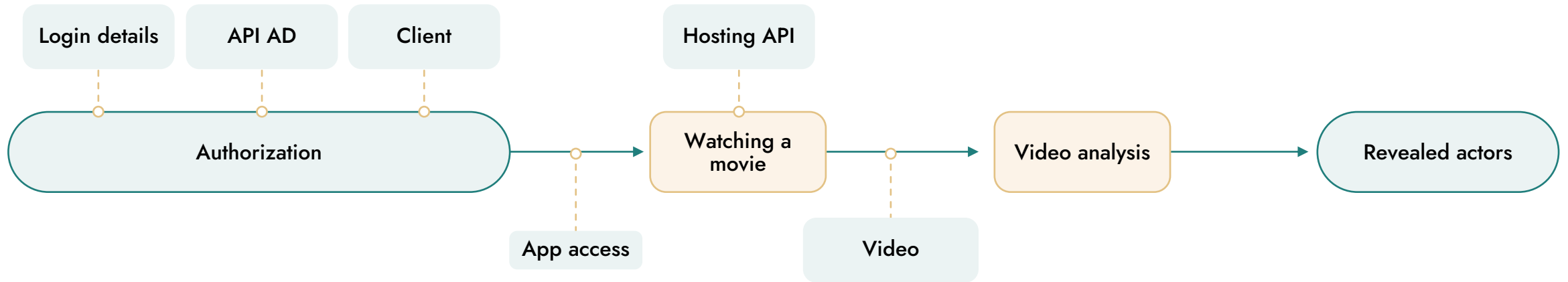
Target scenario when using AI



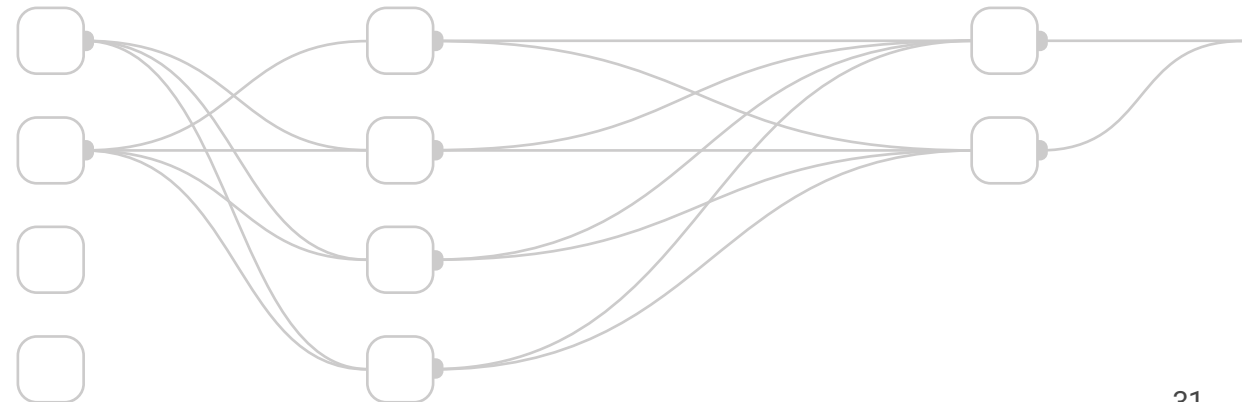
The introduction of actor face recognition technology contributes to user engagement and, among other things, has a positive effect on such product metrics as: LTV, Monthly recurring revenue, Retention-rate

Business process of custom scenarios

Simplified diagram of the business process "Recognition of the faces of actors during the film"

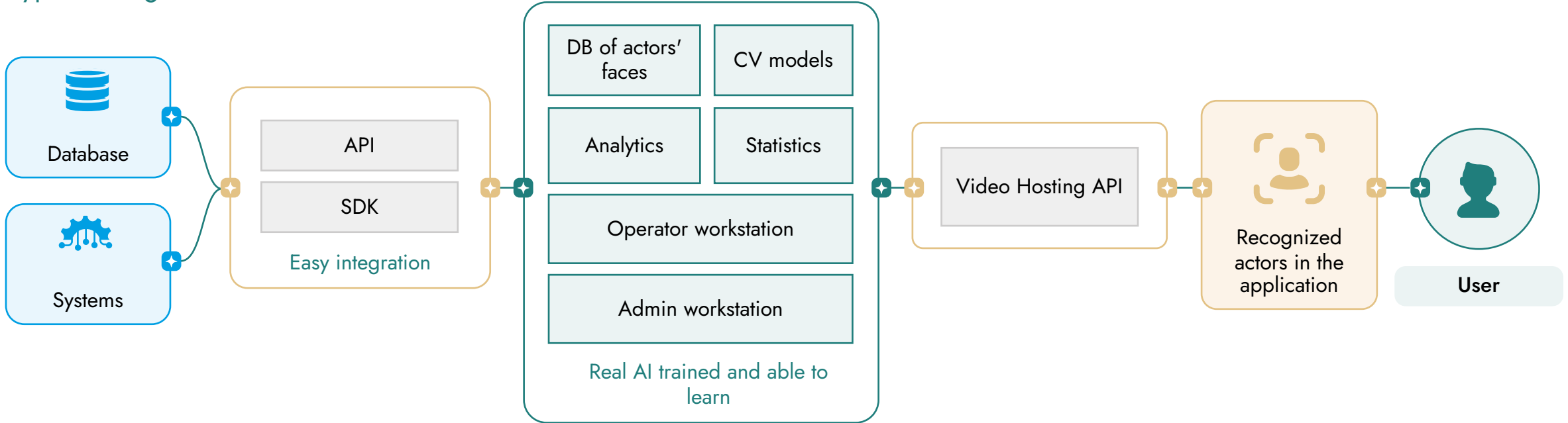


The entire product and the data processed by it is stored entirely on your server, without creating any additional cyber threats.



We seamlessly integrate the solution into the IT landscape via API and SDK

Typical integration scheme



The solution can be integrated with the following systems

1. Integration with authorization systems
2. Integration with video hosting
3. Database integration for getting information about actors
4. Integration with other databases and services (for example, a digital assistant in Telegram, when uploading a photo of a pointing actor)

An intelligent system for generating unique recommendations for viewing content for each user

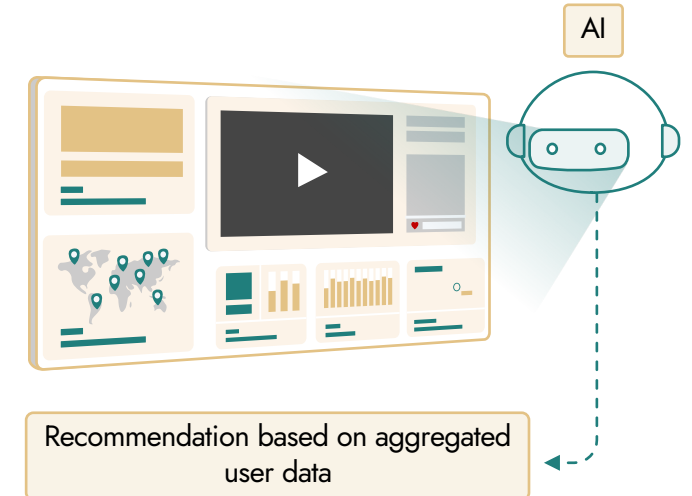
Description

The algorithm analyzes a large amount of information about the users of the streaming service and issues recommendations - the selection of the optimal content for each user based on personalized parameters for the AI model

Compound

- AI
- Cascade of recommender systems
- Operator workstation

Principle of operation



Target application of the solution

BUSINESS OF DIGITAL PLATFORMS

Effects



Increasing the number of active users



LTV Growth



Growth in user session duration

Functionality

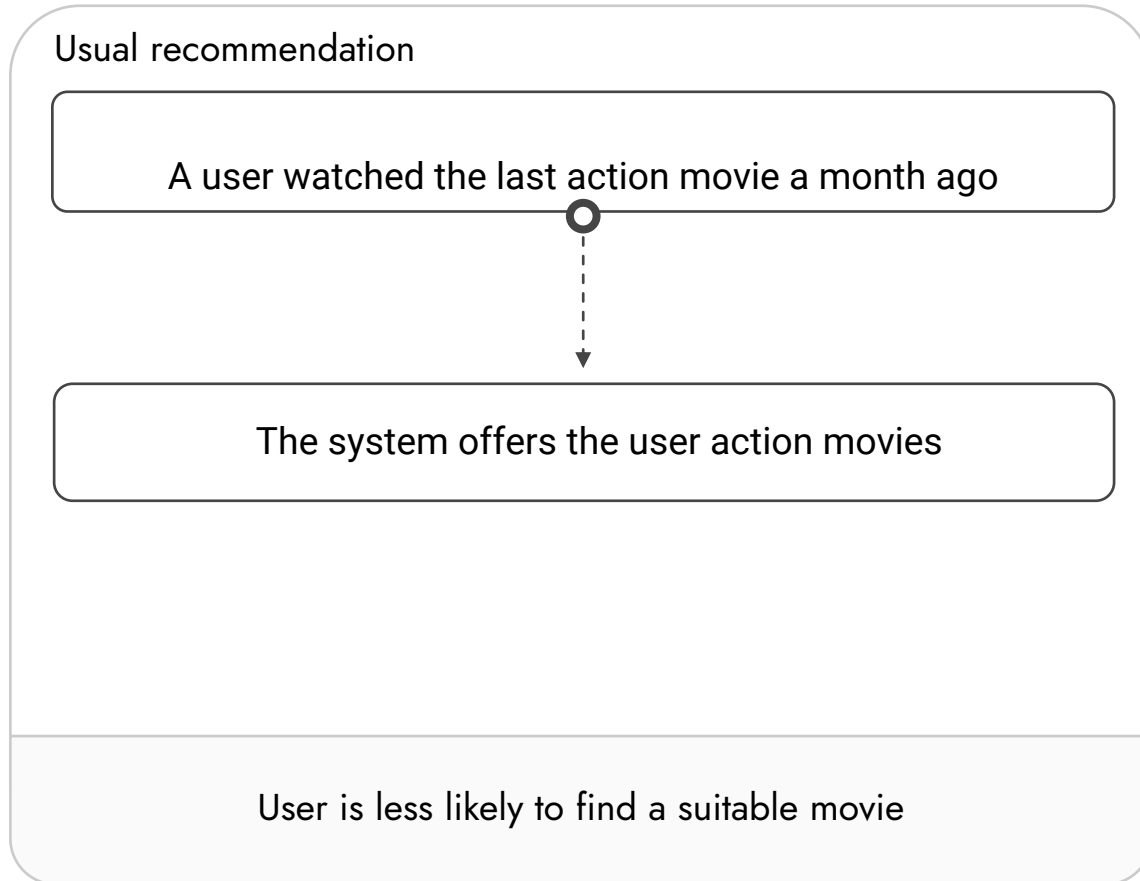
- Recommended selections
- Personalization of the main page of the application / site according to the interests of the user

The system improves product metrics of services, in particular, affects LTV

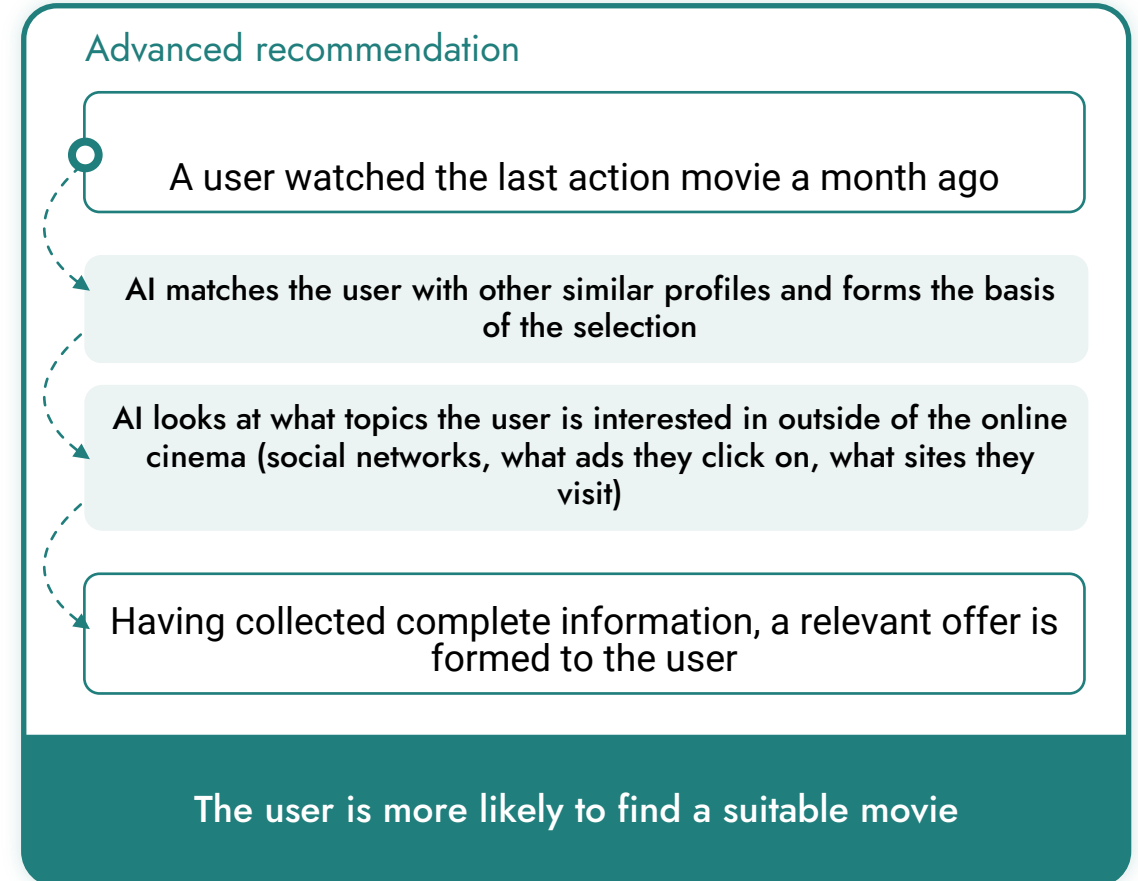
User scenario example 6

The user himself does not know what he wants to watch by going to the online cinema after a long time

A likely scenario without the use of AI



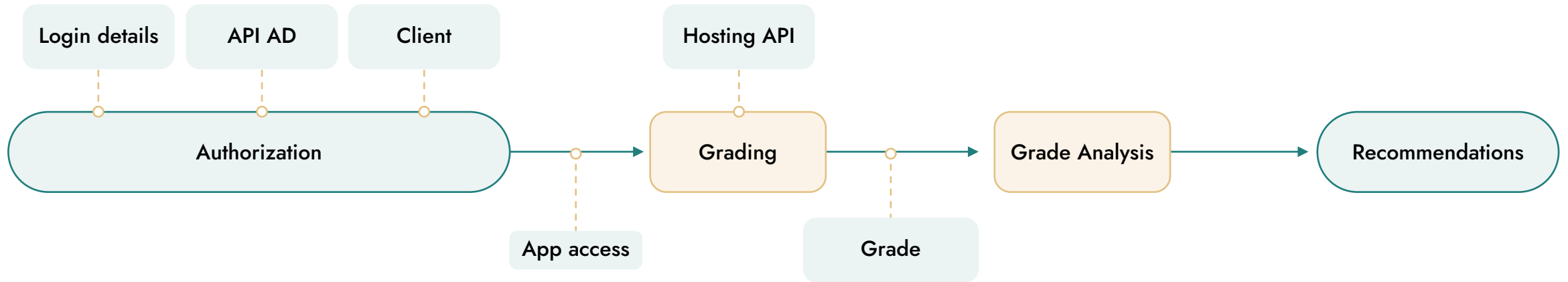
Target scenario when using AI



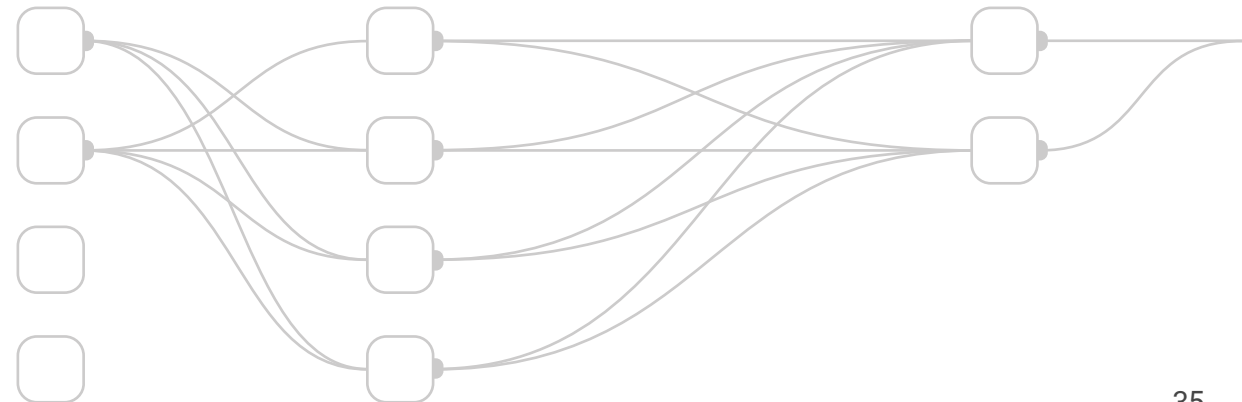
An intelligent recommender system falls into the interests of the user an order of magnitude higher than primitive algorithms

Business process of customer's scenarios

Simplified diagram of the business process "Recommendation of films for viewing"

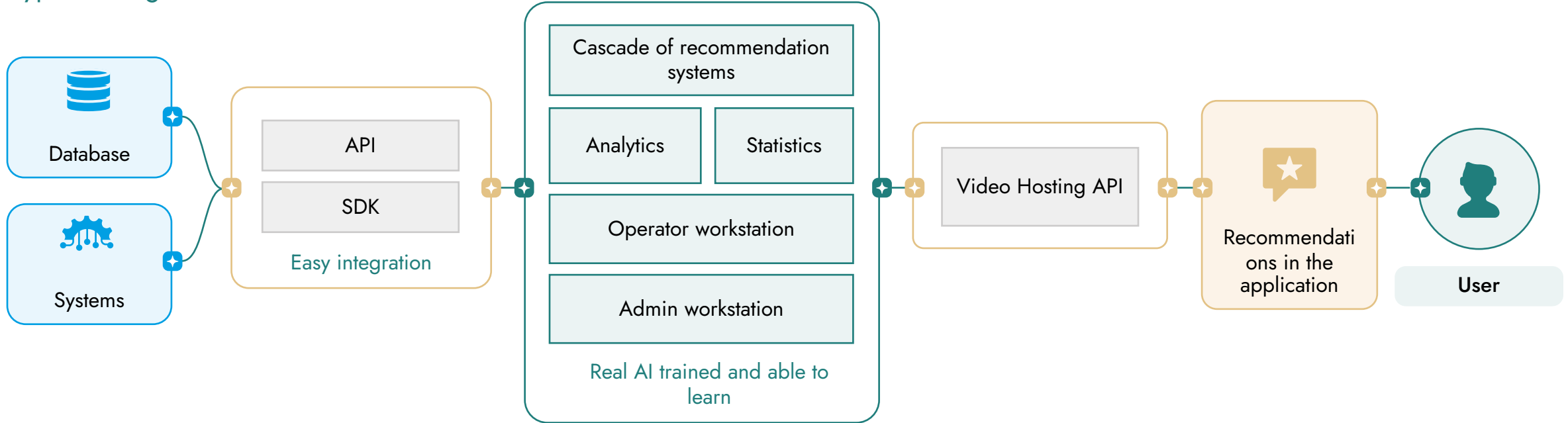


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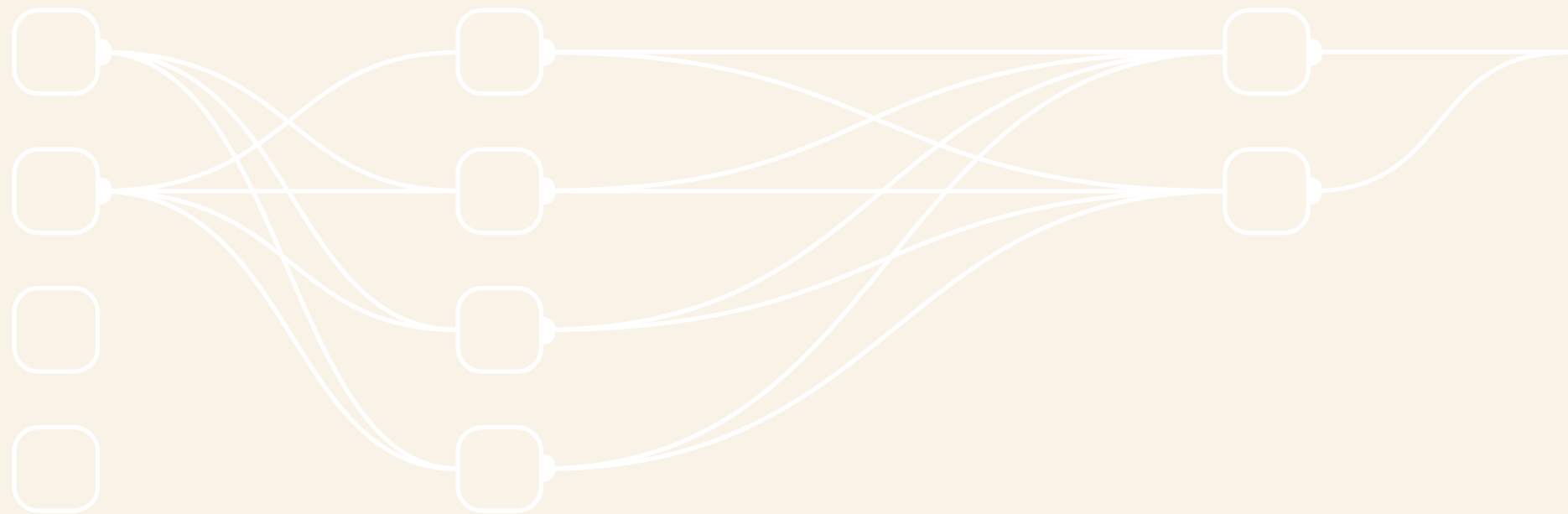
We easily integrate the solution into the IT landscape via API and SDK

Typical integration scheme



The solution can be integrated with the following systems

1. Integration with authorization systems
2. Integration with user statistics database
3. Integration with user content rating system
4. Anonymous data processing is possible
5. Content database integration (tags, etc.)



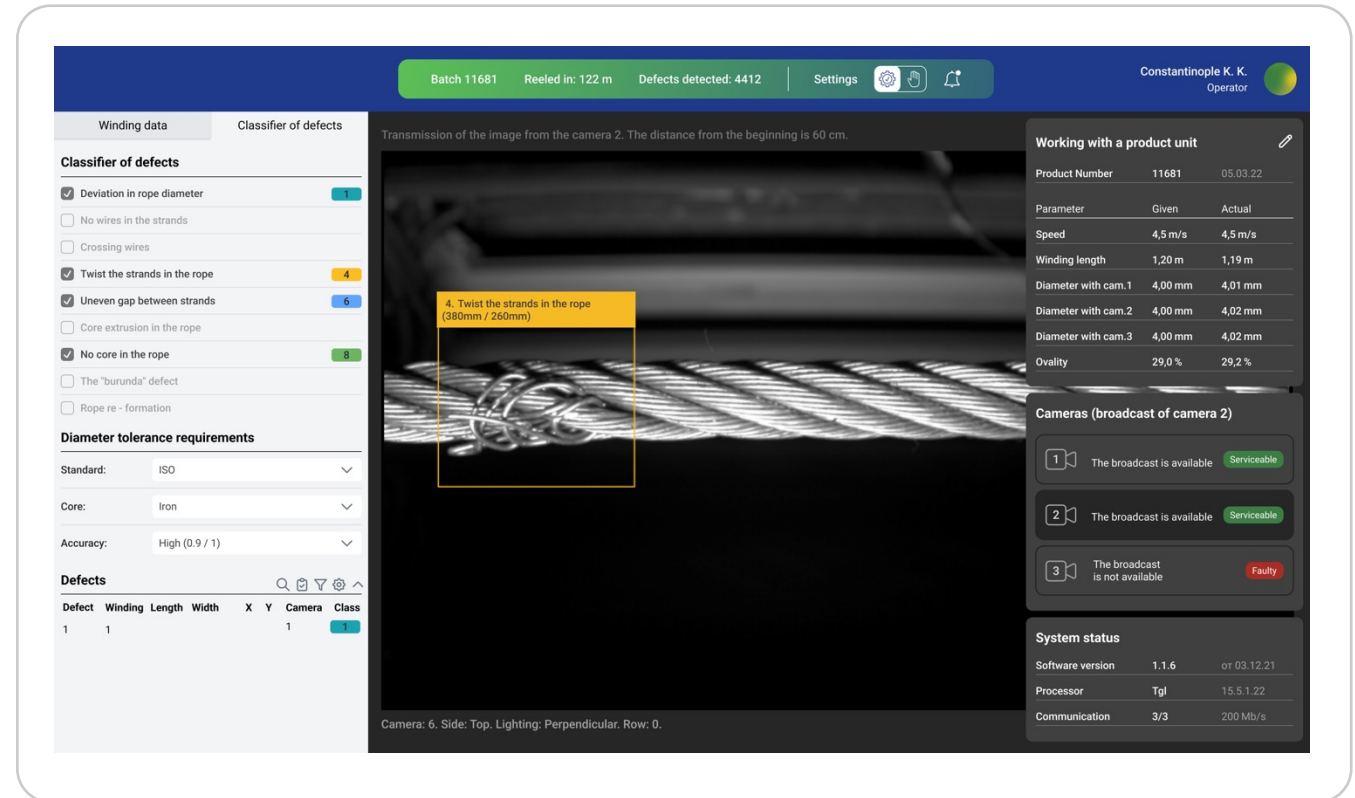
EYE Platform



1/2

EYE Platform

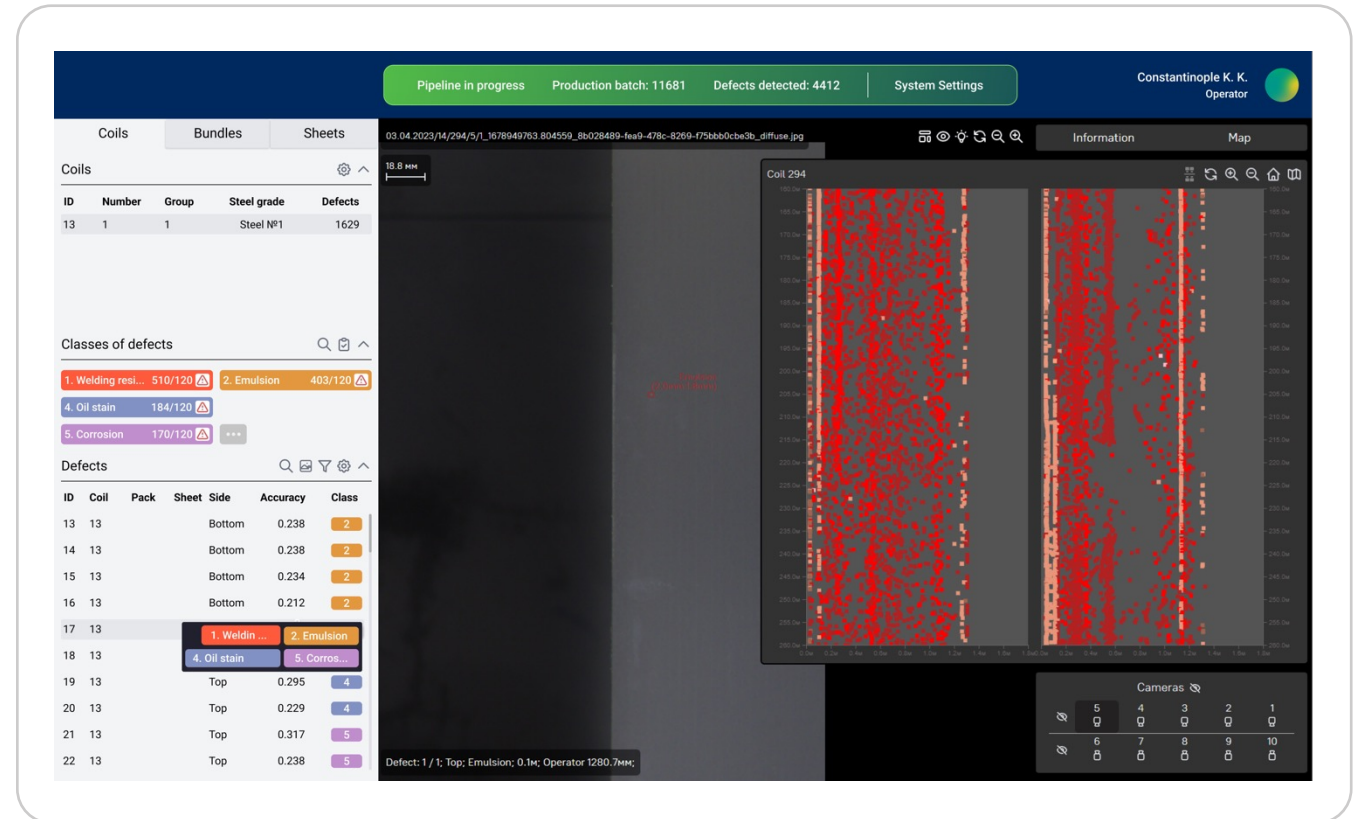
- Control of the production process at industrial, mining and processing enterprises
- Identification of violations of industrial safety
- Face recognition
- Additional training of pretrained CV models and adaptation of AWP for each specific group of tasks
- Providing real-time analytics



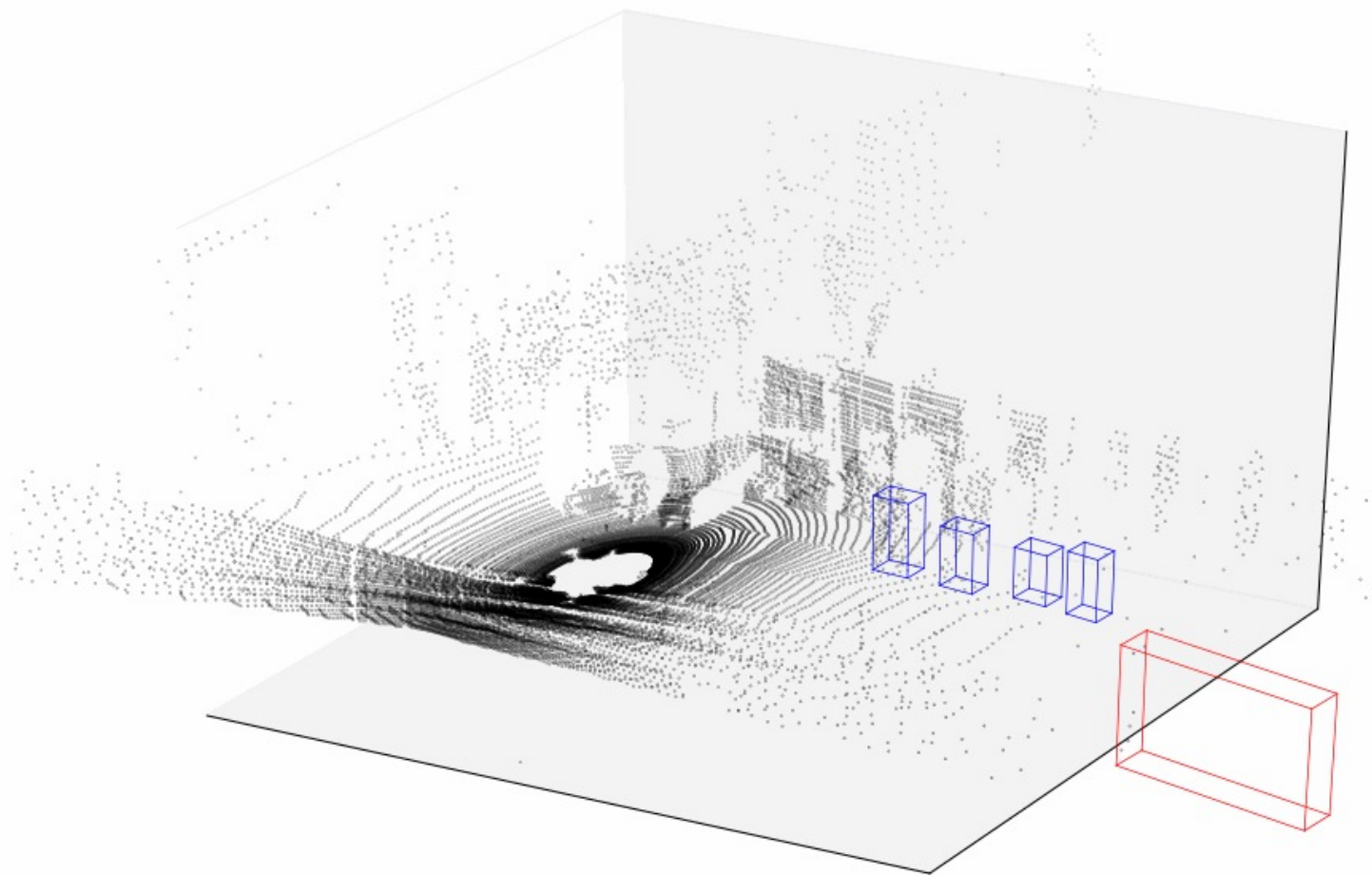
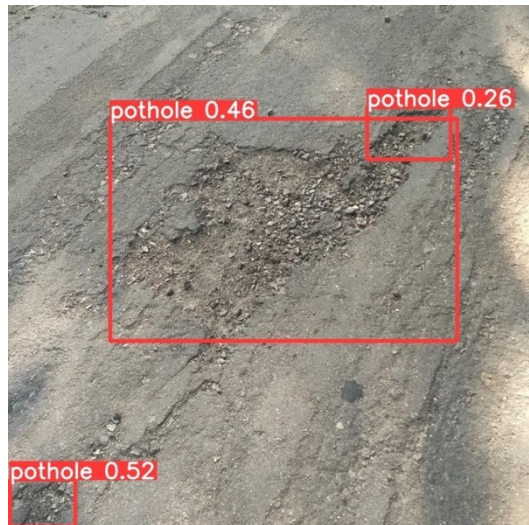
2/2

EYE Platform Industries

- Automatic change of attachments
- Optical-thermal imaging surveillance, incl. to predict equipment failure (heating, change in rolling amplitude)
- Personnel control (PPE, equipment for performing operations on conveyors, control of presence at workplaces)
- Stock control (pallets in the warehouse, for example)

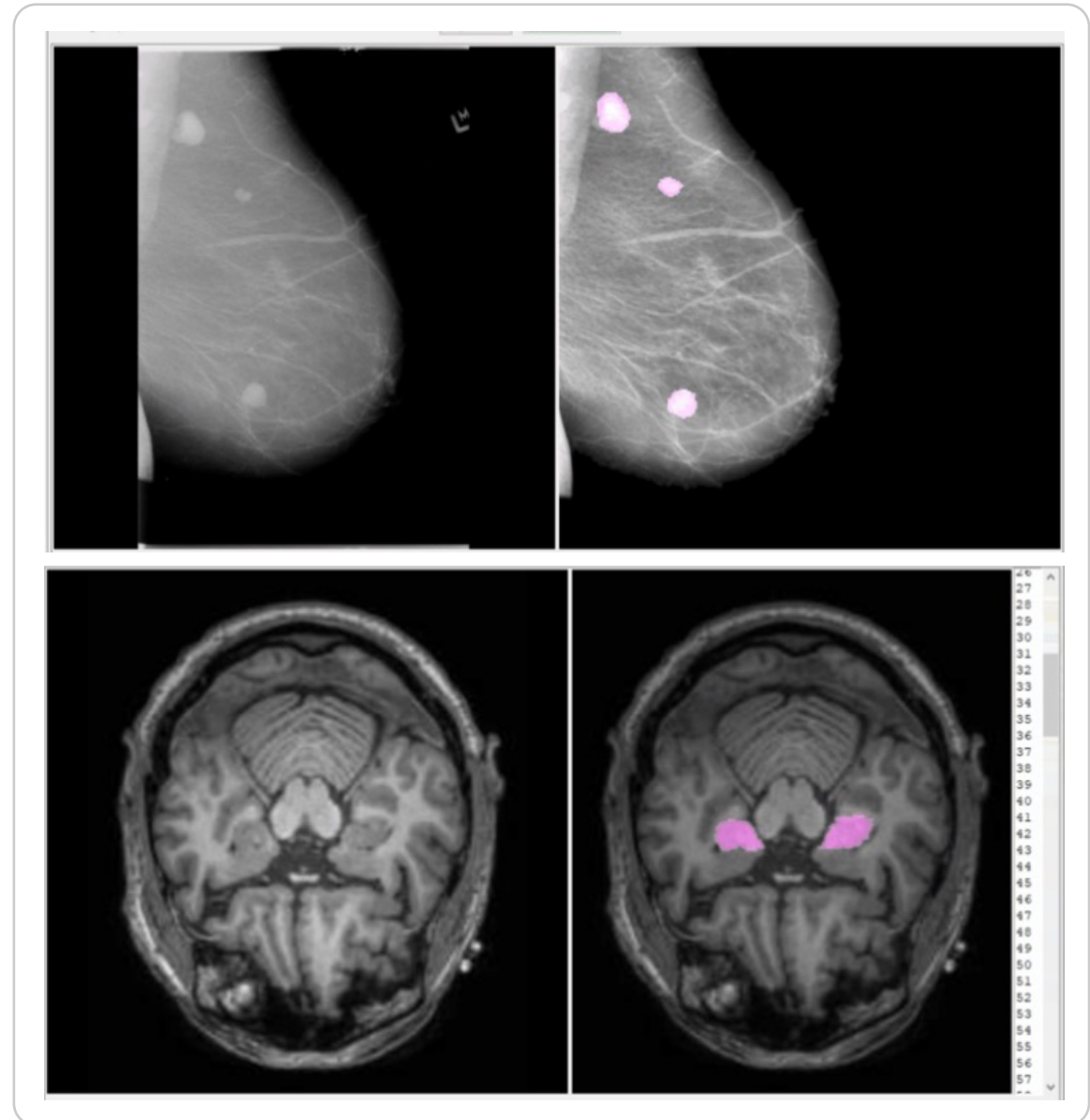


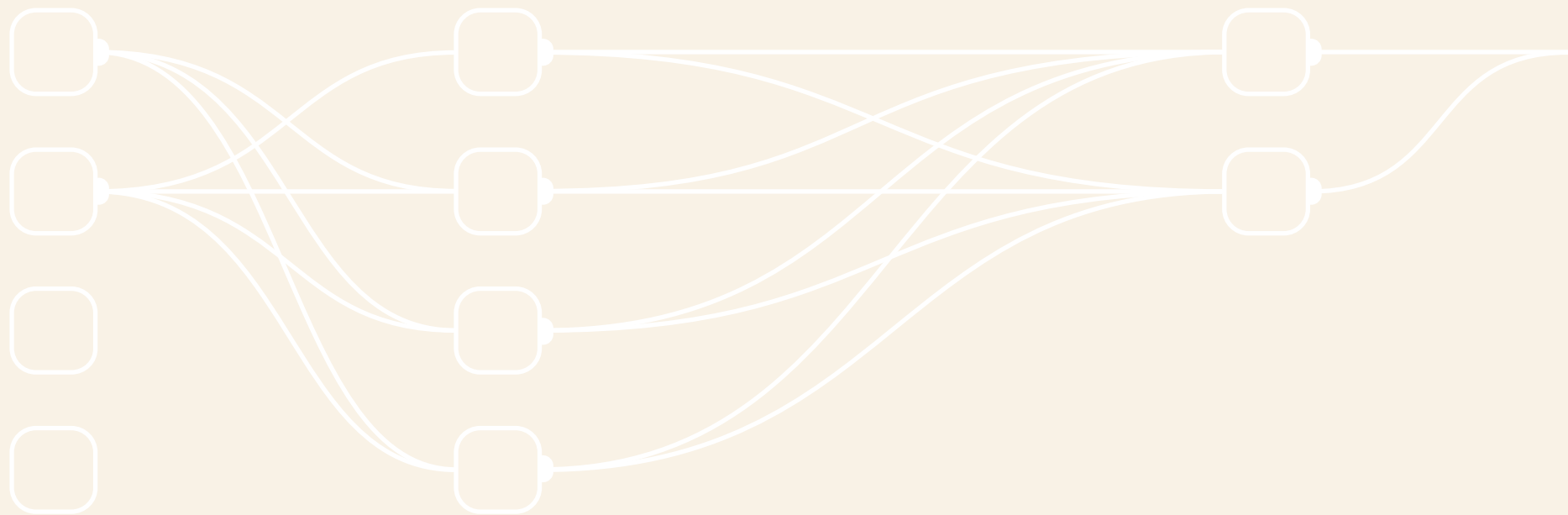
EYE Self-driving car



CDSS Neuroimager

- Recognition of pathological formations by various radiological examinations and digital images
- Localization of pathology and calculation of the percentage of affected tissues
- Classification of pathological changes in accordance with medical standards
- The ability to synchronize the processed results with the original ones for greater clarity and convenience in the analysis by specialists
- Integration with common medical services
- Prioritization of studies (triage) in the doctor's work list





**Artificial Business Intelligence Platform
& Smart Clinic Platform**

ABI Platform

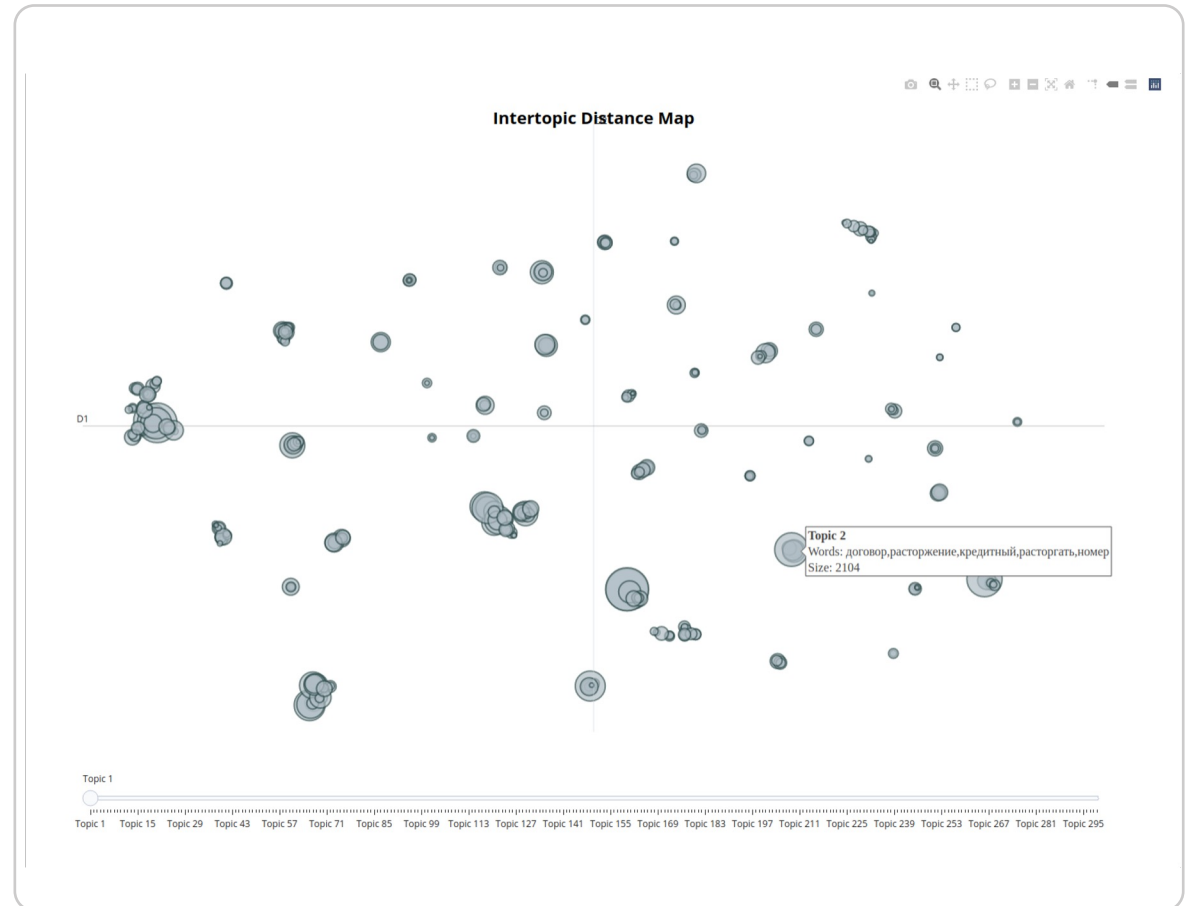
- Increasing the speed of data markup due to active learning technology
- Text Sentiment Analysis Module
- Search in unstructured text documents
- Automation of the processes of creating an ad and the semantic core of contextual advertising

Business effect:

1. Increasing conversion from contextual advertising impressions
2. Highlighting an opinion about a business product from the target audience
3. Reduced time to search for work information
4. Reducing the time and financial costs associated with data markup

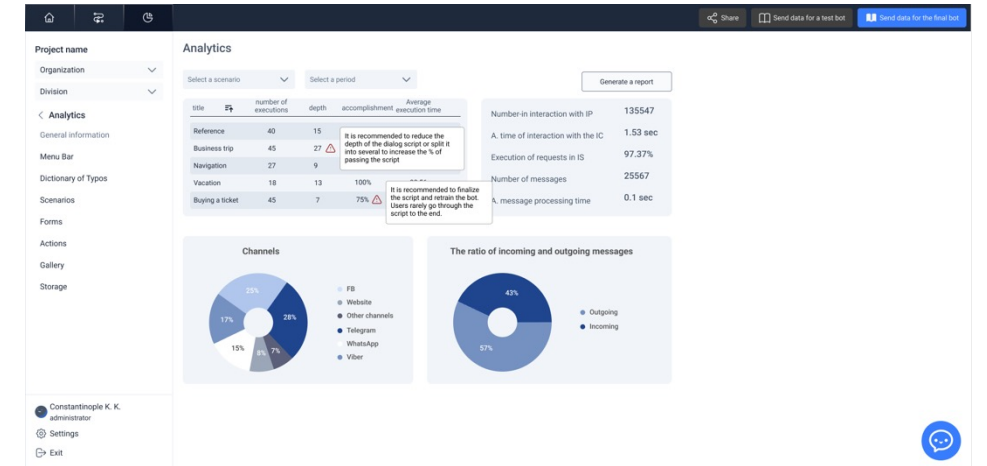
ABI Platform

- Automated construction of a knowledge graph based on dialogues with customers
- Sentiment analysis of a phrase: individually taken as a whole, relative to a specific entity in a phrase, a phrase in context
- Knowledge base based on unstructured materials of the Bank. Question-answer system based on the Bank's documentation
- Clustering and identifying trends in the news flow



ABI Platform: Script Similarity

- Monitoring the quality of communication with customers
- Speech recognition - turning an audio recording of a conversation between a client and a call center operator into a text file
- Search for errors in the conversation between the operator and the client in terms of operator deviations from the given script: dialogue logic, violation of ethics.



The screenshot shows the 'Settings' page of the ABI Platform. It includes a sidebar with navigation options like 'User Phrases', 'Dictionary of Types', 'Notifications', 'Scenarios', 'Forms', 'Actions', 'Services', 'Logging', 'Analytics', 'FAQ', 'Gallery', and 'Storage'. The main area is divided into several sections: 'Bot front API host' (with a URL field), 'Mailboxes for sending errors' (with a list of email addresses), 'Migration control' (showing current and latest versions), 'Lifetime of logs' (with fields for quantity, type, and rotation period), and 'Log rotation period' (with fields for quantity, type, and rotation period). A 'Save' button is located below the mailboxes section.

Bot front API host
http://93.175.29.251:8080

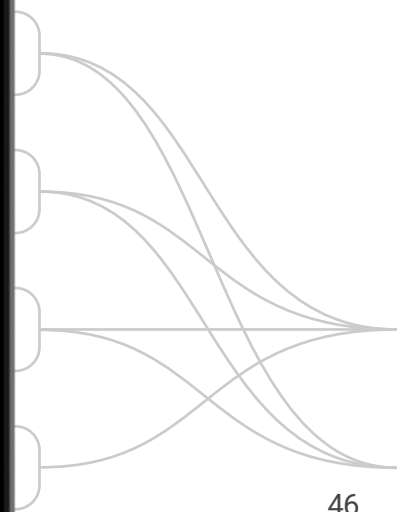
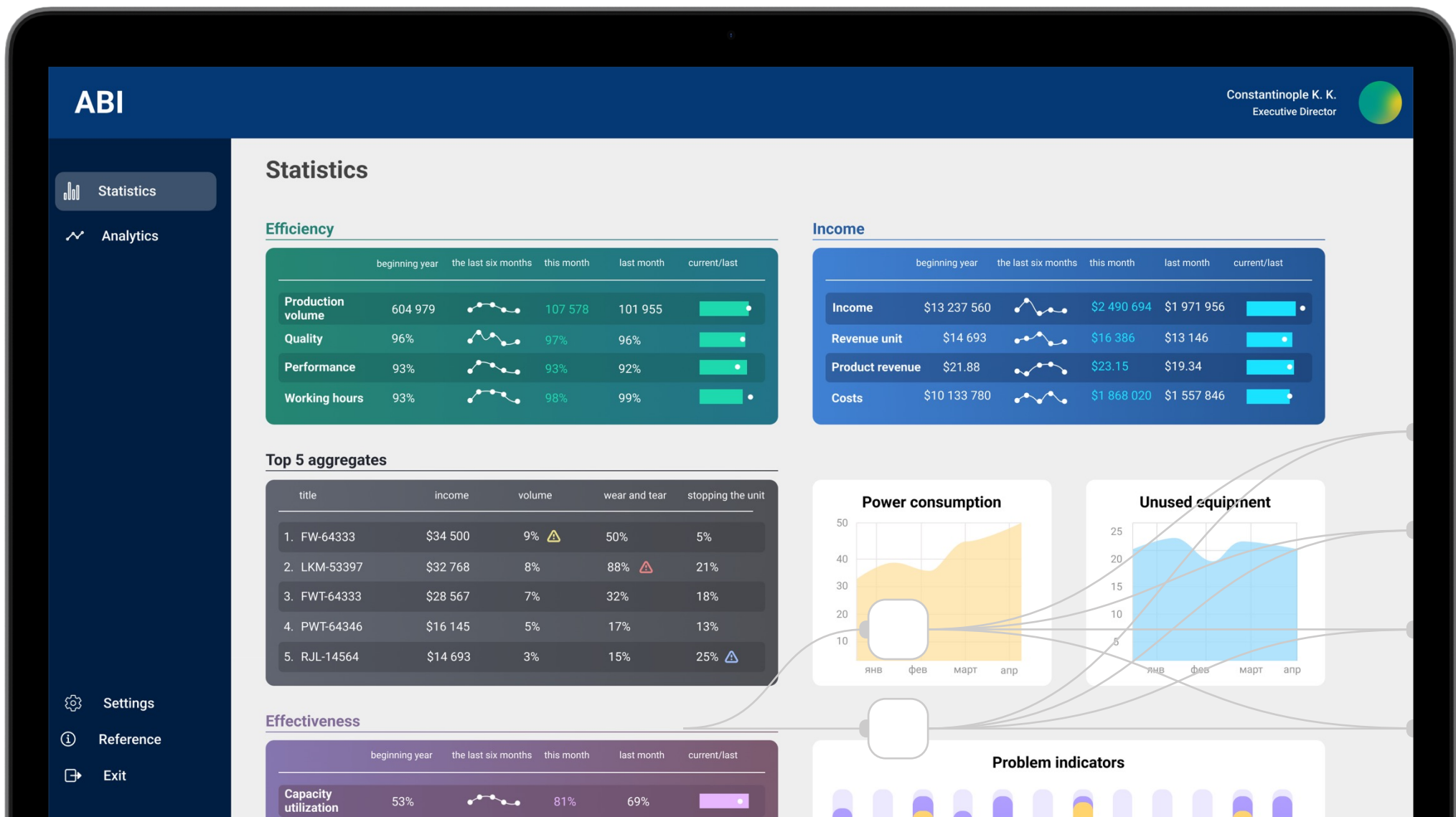
Mailboxes for sending errors
x i.khusainov@yahoo.com
x parfenov@yahoo.com
x zakirov@yahoo.com

Migration control
Current version: 15
Latest version: 15
Status: OK

Lifetime of logs
Quantity: 30
Type: Day
Morning
Day (selected)
Night

Log rotation period
Quantity: 5.00
Type: Day

ABI Platform: Industry



Smart Clinic: Patient Infotainment Terminal

Tikhonova Olga

Monitoring

Statistics

Settings

Reference

Exit

Admin Panel / Monitoring and devices

4

OFF/ON

Total working time

152 days 3 hours 2 minutes

From 2021- 05- 25

Working hours

2 days 3 hours 2 minutes

ROUTER

Ready

GO TO SETTINGS

MONITOR 27"

Ready

GO TO THE SCREEN DEMO

MONITOR 19"

Ready

GO TO THE SCREEN DEMO

BARCODE SCANNER

Ready

THERMAL PRINTER

Ready

MICROPHONE

Ready

GO TO SETTINGS

SPEAKERS

Ready

GO TO SETTINGS

Monitor 27"

Monitor 19"

Speakers

Microphone

Barcode Scanner

Thermal Printer

Admin Panel / Statistics / Preventive Inspection

Conducted professional examinations for today 1876

Professional examinations were carried out for the entire period of work 457890908

STATISTICS ON THE NUMBER OF PREVENTIVE EXAMINATIONS

44 Department 13/06/2021 → 13/06/2021 Apply

week month year

STATISTICS ON PROFESSIONAL EXAMINATIONS

44 Department 13/06/2021 → 13/06/2021 Apply

week month year

Select the type of coupon

Ticket to the registry

Click to download the image

Format: png, jpg. The size is not more than 2 MB.

Address

Paris, Main street, 33-b

Telephone

Ticket to the registry

Message

Be healthy!!

Update

June 15, 2021 12:00

Medical and sanitary part of FO BY "MDPS"

Paris, Main street, 33-B

33769211222

TICKET TO THE REGISTRY:

GET HELP

P001

Be healthy!!

CDSS RD (Rare Diseases) Neuro-Scanner

- The Electronic Health Record (EHR) Screening System is a software solution based on artificial intelligence technologies
- This product increases the efficiency of detecting patients with orphan diseases for further treatment.
- The trained CV and NLP models analyze studies, physician EHR epicrisis, and patient pedigree to predict the risk of orphan diseases in children and diagnose these diseases in newborns
- The following diseases currently can be analyzed:
 - Mucopolysaccharidosis type 1
 - Fabry disease
 - Pompe's disease
 - Niemann-Pick disease type A / B (ASMD)
- The advantage of this method is the reducing the time spent on processing one medical record from 2 to 0.0013 minutes, as well as the time of establishing a diagnosis for a group of orphan diseases from the moment the patient encounter in a clinic from 7 to 2 years, which will reduce child mortality by 50%