IVA COGNITIVE Cera

Artificial intelligence system
Video analytics for Retail

Point TRADING Group
Since 1987

Why we?

> One of the fast-growing vendors

Values	Key targets
350 people 80% is R&D stuff	12 products in high technology sector, unique developments
	~583,000 total per-camera licenses to be sold by 2025
	75 world's distributors
7 years R&D work	55% conversion of current pipeline into sales
	40% of Russian AI market for IP cams until 2022
	In top 3 software producers from Russia
$ 55 millions Annual revenue	250 projects more than $0,5 mln

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Application area

01

Real-time search for people
Analysis and search in any video archives without connecting to video cameras

02

Logging of all appearances of people within camera coverage including search on photos or still images from camera

03

Work with ‘black’ and ‘white’ lists – automatic alerting about appearance within camera coverage

04

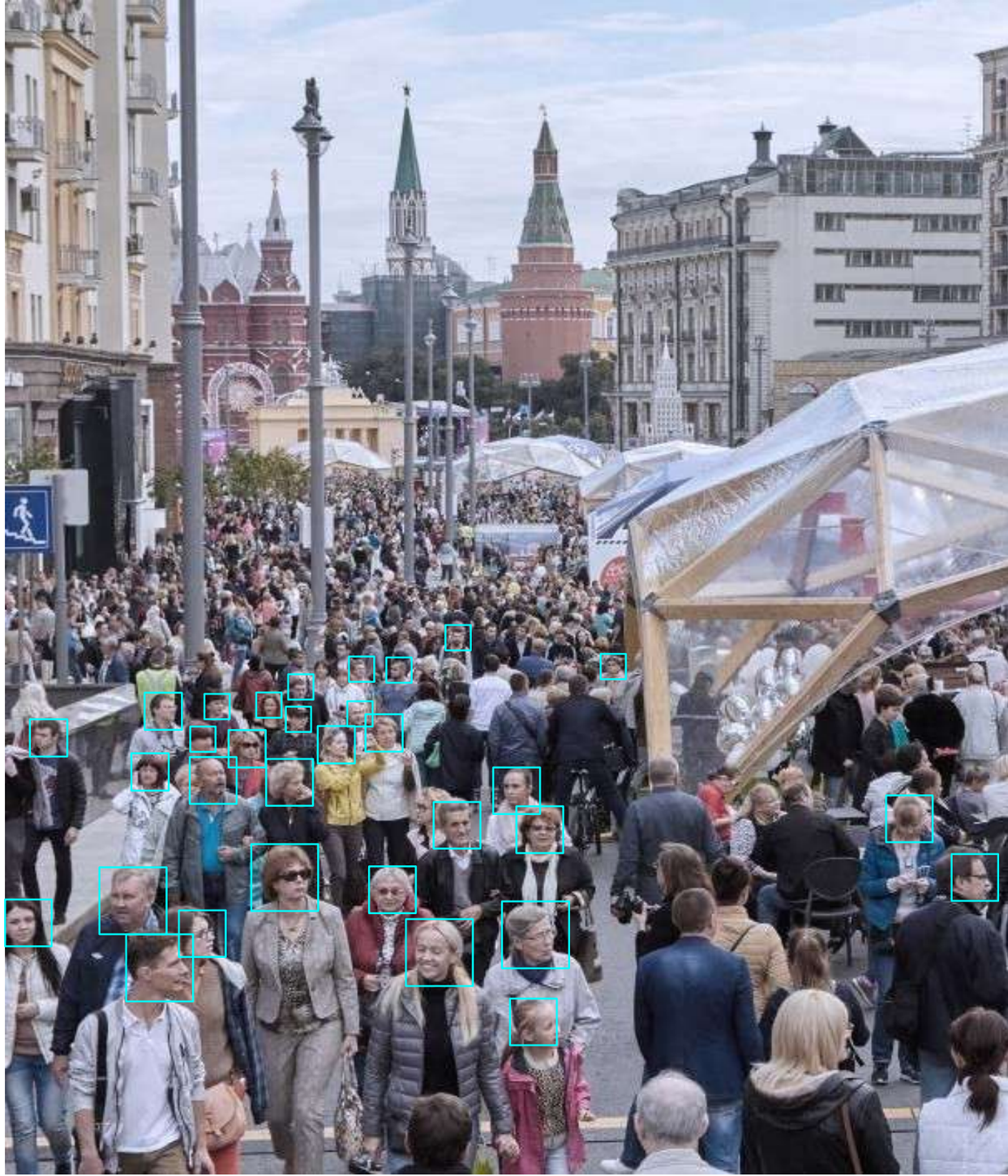
Biometric authorization in IT systems and at check-points

05

Control of access areas – alerting on presence or absence of specific groups of people or unauthorized people in specific areas
Tracking of time of presense/absence at work place and in the public place

06

Integration with the existing access control systems. Prevention of ID card passing to third parties



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APPLICATIONS

- Safe city
- City and suburban environment
- Airports
- Restricted area
- Banks
- Subway
- Retail

Internal architecture ACS

Efficient data bus

- **Video processing library**
  video decoding

- **Face detection**
  Neural network
- **Face preprocessing**
  Alignment, enhancement
- **Feature extraction**
  Neural network
- **Tracker**
  Accumulating consequent frames of the same face

Camera video feed

Search

Database

API

UI
Application

Integration
with 3rd party software

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Retail needs transformation

> The old methods no longer work

Up to 2% of turnover is theft by staff at the cash desk

5% of customers happened to leave a shop recently as a results of long queues

In 40% of cases at the end of the day the shelves are empty

30% of clients hate to carry loyalty cards in pouch

25% of advertisement do not reach appropriate visitors

99% of criminals return after first incident

in **7,2%**

turnover increase
After integration of the base functionality of the solution

IP cams use cases in 2019

> Modern methods based on AI

Control of cash transactions
Fraud of 4 cashiers on average, the system detects automatically per month

Queue control
0% of clients will leave you because of queues

Loyalty increasing
Identification of client with high average check.
Personal service for VIP customers.

Smart Shelf Control
Controls the fullness of the shelfs

Staff control
No need to think about staff controlling, system will do it for you

Security
Reaction from the entrance

Control of cash transactions

99

No fraud

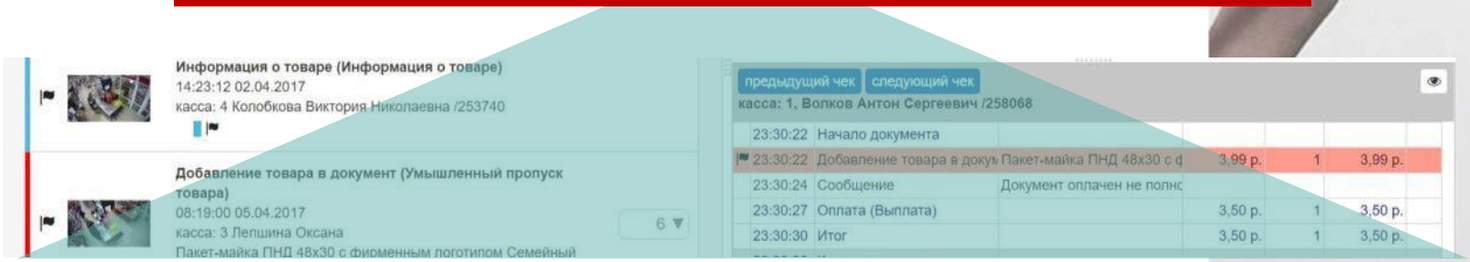
The software compares data from IP-cameras and all events from the cash registers on-line, using **video analytic algorithms**
by the crossing of events according to specified scenarios, automatically detects potential **violations by the cashier**

5,2%

Unspecified loss reduced

The system not only **prevents losses,** but also controls the **discipline** of the cashier.

Adding good to bill (intentional omission of goods DETECTED)



Queue control

Instant response

Speaks about queues. Integration with loudspeakers

12 times
reduced the number of customer service calls

1,7%
turnover increased

Queue is more than 5 clients (ALARM)

Smart Shelf Control

Merchandising control

The system controls the fullness of the shelf and additional functionality can compare the current display with planograms

10 times

reduced staff labor costs

2,7%

turnover increased

Security and staff control

> Identification of criminals and staff

Visitors can steal, damage or consume goods in supermarket
Staff can be in unappropriated places or be late

System can reveal bad persons from the entrance

Automated search in database for identification people from ‘white’ and ‘black’ lists

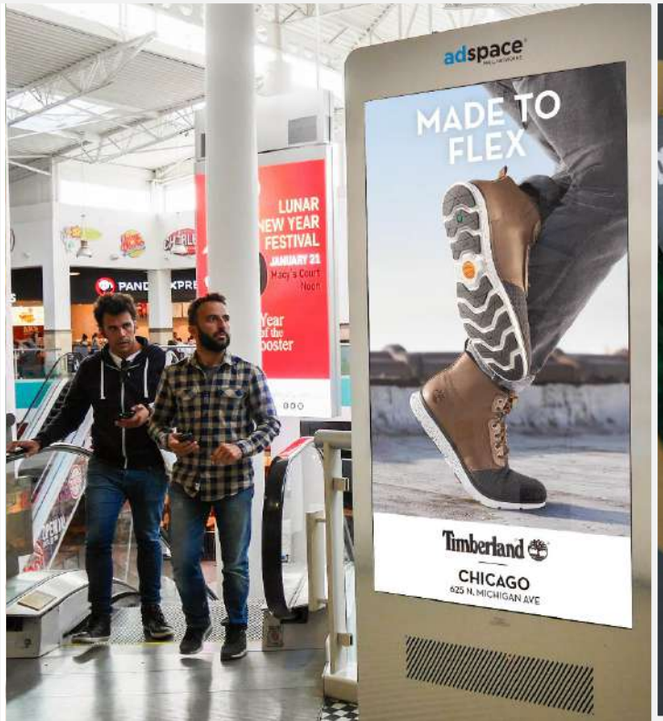
Rapid response to abnormal situations.

Staff movements control

Extended marketing

Advanced advertisement

1. **Loyalty** - customer face instead of discount card
2. **Accuracy of accounting** - attaching identity card to the system of time tracking
3. **Advertising** – to run personal videos
4. **Buyers interest** - will be displayed as a heat map



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2019

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