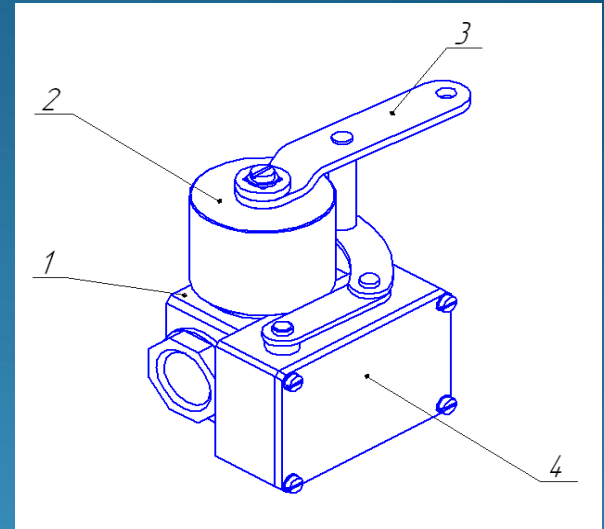


Semiautomatic Electromagnetic Code Modulation Safety Globe Valve



Challenge problem

- 500 cases of flooding apartments in Kiev every day (90% of which – due to negligence and demolition Communications)



79 581 fires were registered in 2015 in Ukraine.

Losses caused by fire, rocks 5 billion 676 million 392 thousand. UAH, which constitute direct losses of 1 billion 458 million 296 thousand UAH and side - 4 billion 218 million 96 thousand UAH. More than 100 thousand victims.

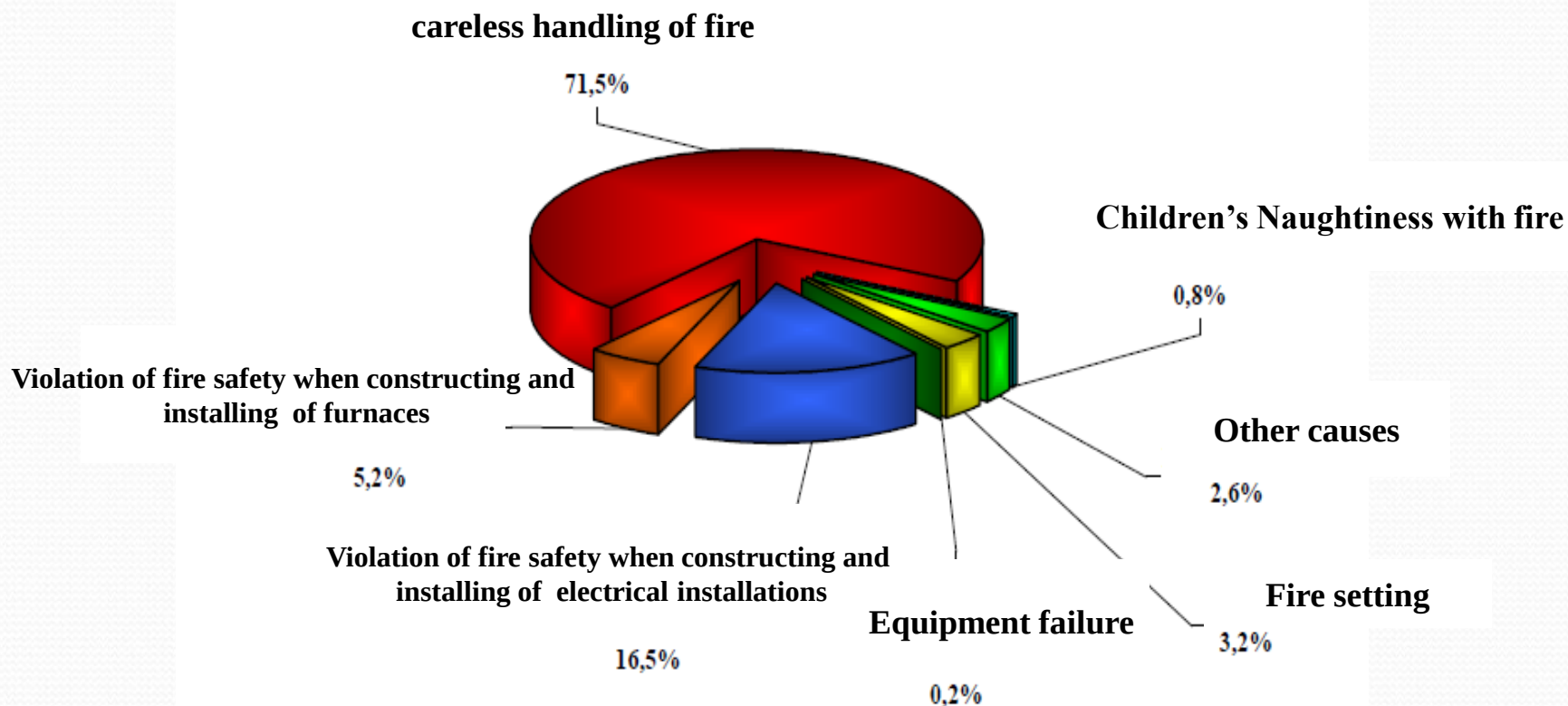


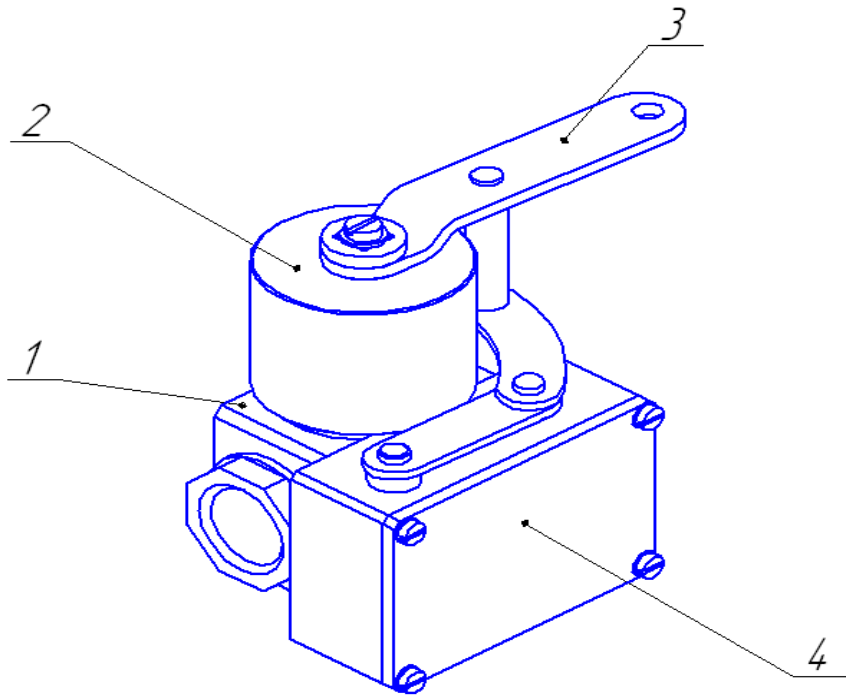
Fig. 1. The share of fires by their causes

Household indebttness

- The debt of Ukraine's population for housing and communal services in September 2016 amounted to 15 billion UAH (569 million USD)



Project Descriptive Summary



1 – globe-valve , 2 - polarized electromagnet,
3- lever, 4- radio-controlled microcontroller.
The power supply of valve in two AA
batteries voltage 7,2V.

Microcontroller **service life** without
replacing the batteries is **15 years.**

The idea of using this ball valve :

*-in capital construction as valve,
triggered by alarm flooding sensor and
shut off the water supply;*

*-in emergency situations Wi-valve
emergency fire fighting, triggered by
smoke detectors, temperature, flame
etc. and includes water supply;*

*- in housing authority as a valve
blocking water in case of failure to pay
utilities;*

-for insurance companies.

Problem Solving

- Saving water resources, and address the problem of defaults in housing, creating wireless fire extinguishing systems with long-term self-powered.
- Job creation, produce the competitive exports products



[illegible]

System of protection from water leaks (RF)

- 1) The valve is usable as a normal ball with manual control in closed position. Models with motor-reducer have not a manual control.
- 2) In an open position, the valve occupies the position normally-closed or normally-open, depending on configuration, unless the manual control.
- 3) An overlap occurs almost instantly by actuation labor springs, not by motor-reducer, as is the case in similar models from other manufacturers.
- 4) The valve has an autonomous system power from two batteries AA. The validity of the valve is 15 years without replacing the batteries. Valves Reduction motor with a wire feed system, which greatly complicates their use reduces reliability and increases costs.

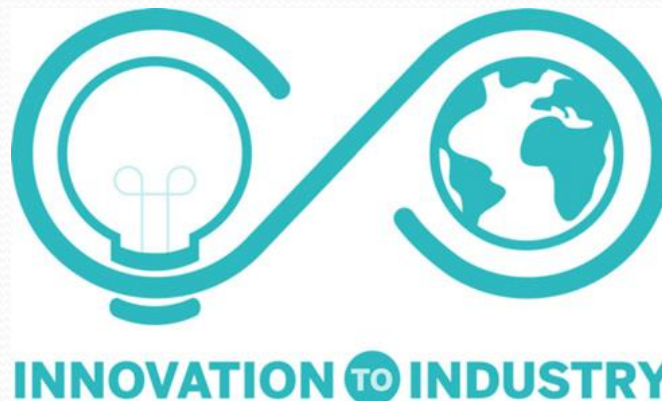


Commercialization

- Commercialization based on the Science Park at the Taras Shevchenko National University of Kyiv, involving investment resources, fundraising Ministry for Emergencies, construction and insurance companies.
- Marketing 3-M model (market, message, media)



The mission of the Park includes advancement and commercialization of smart R&D and technology projects in the field of theoretical and applied Sciences.





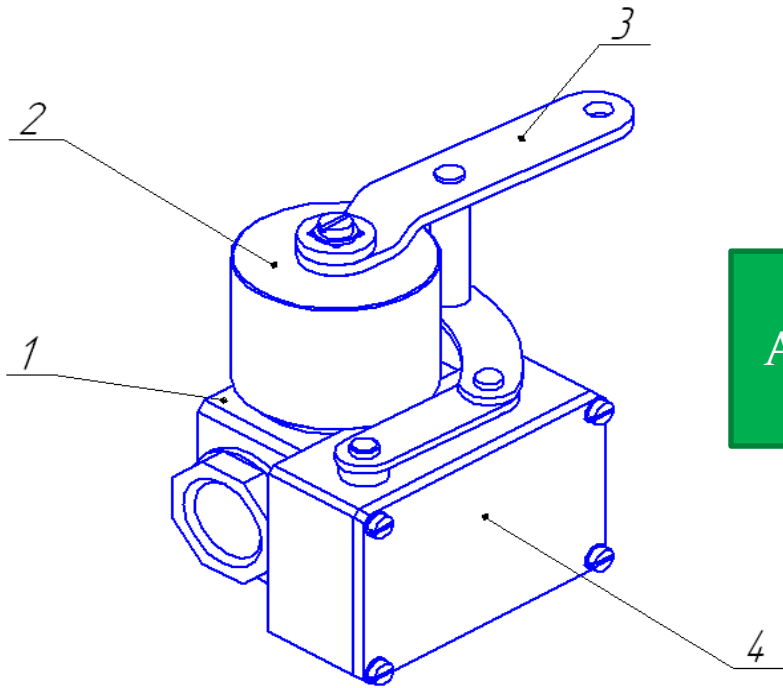
Project team

Alona Vikulova – project manager, *PhD in Economics, teaching fellow, the department of management innovation and investment activity, Taras Shevchenko National University of Kyiv*

Alex Bediukh– technical support, *PhD in Physics and Mathematics, Higher Senior Officer, Taras Shevchenko National University of Kyiv*

Oleg Vikulov – architect of this concept, technical support of the project

The main stages and budget



All engineering documentations





STEPS TO

COMMERCIALIZATION

DOE-funded scientists at National Labs and universities make a scientific discovery with potential commercial value.

①
RESEARCH

The scientists inform the lab's technology transfer office about the invention.

②
DISCLOSURE
&
IP PROTECTION

Once the patenting process has begun, interested companies can license DOE-held inventions.

③
LICENSING

20 – 25
thousand USD

④
INTEGRATION
&
COLLABORATION

The company, often working with DOE support, integrates the discovery into a potential product.

⑤
TESTING
&
VALIDATION

The new prototype is tested and the commercial value of the discovery is confirmed.

⑥
PRODUCT
DEVELOPMENT

The tested prototype is turned into a commercial product.

⑦
MANUFACTURE
&
DEPLOYMENT

The new product is mass produced, brought to market, and sold.



Thank you for your attention!