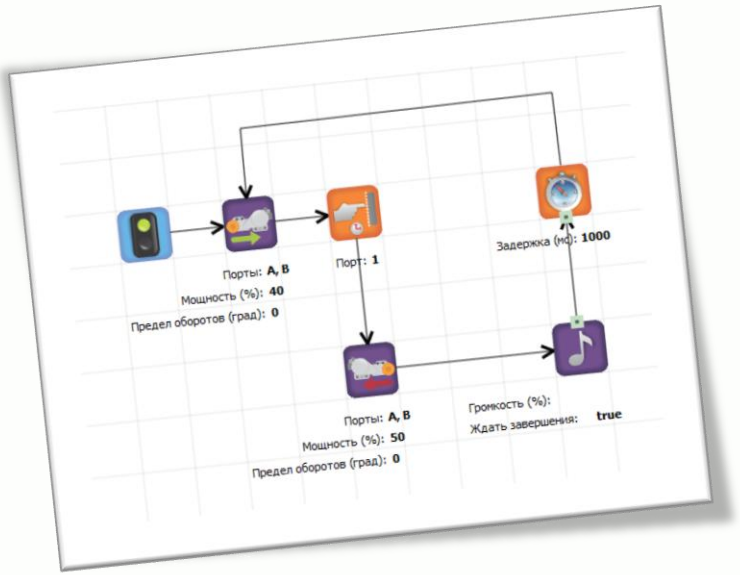
Sk Resident

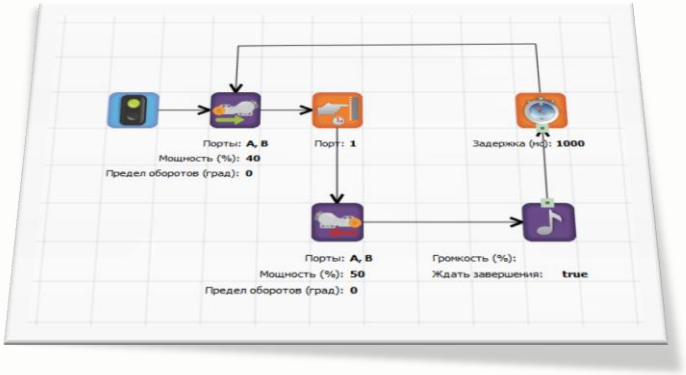
AAA

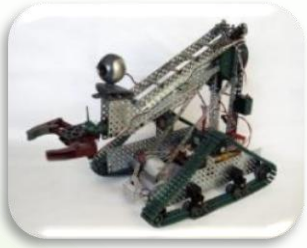
TRIK



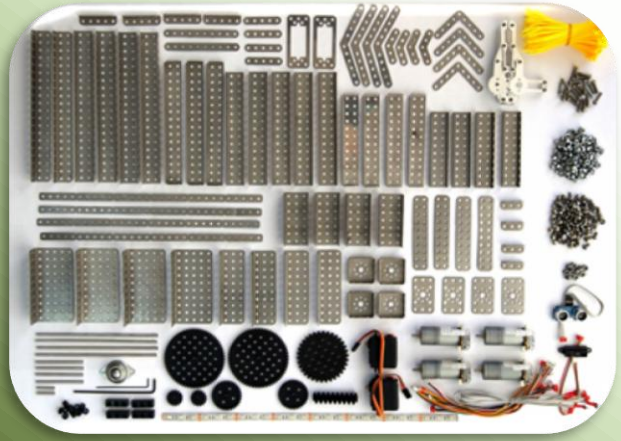

```
Creating #1 platform for personal & service  robotics.
Science      . . . . . [OK]
Technology   . . . . . [DONE]
Sales        . . . . . [STARTED]
IRR          . . . . . 117%
Pre-money    . . . . . $11M
Raising $2M . . . . . .
```

TRIK enhances creativity with cutting edge technologies, providing **everyone** the opportunity to design robots which "see", "hear", and interact. Designed for R&D and startups, perfect for STEM robotics edutainment. Curricula materials available.



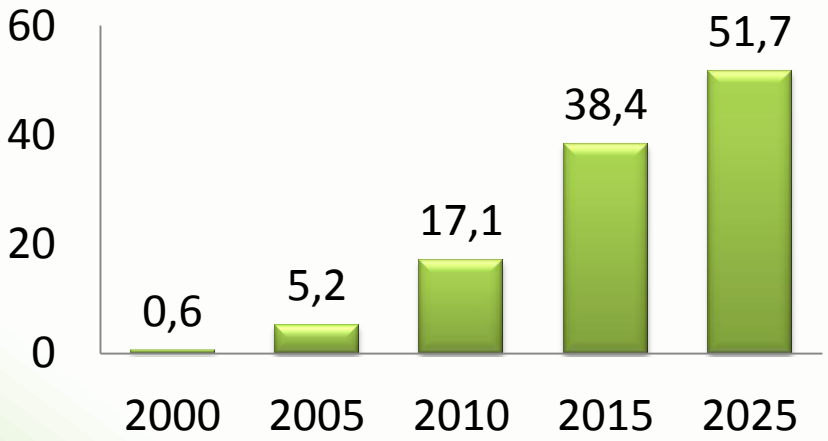


- ✓ Powerful TRIK *cybernetic* controller
- ✓ Draw your programs or build you own visual programming language in 1 day
- ✓ Prototyping kit (all included, 12 models)
- ✓ Download advanced cybernetic algorithms from store, upload your own.
- ✓ Share your smart ideas & work and get paid
- ✓ Reduces R&D and marketing costs 3x .. 10x times



Unified platform for service and personal robotics shortens the path from idea to prototype. Reduces risks, cost, and development time up to 10x times

Market



Personal & service robotics global market in $ Bln by Japan Robot Association, International Federation of Robotics, and other reports

TRIK is a solid trunk for revenue

Toy Robotic Kits 60-times growth in 7 years	
2007	2014
541K sets ($27,5M)	35,8 M sets ($1,69B)
Lego Mindstorms NXT > 300 K sets ($135M)	

Domestic robotics market growth in 2012 was 20% ($1,2B) and to become $17,6B in 2017 (IFR report).
Russian market ≈ 2% global market.

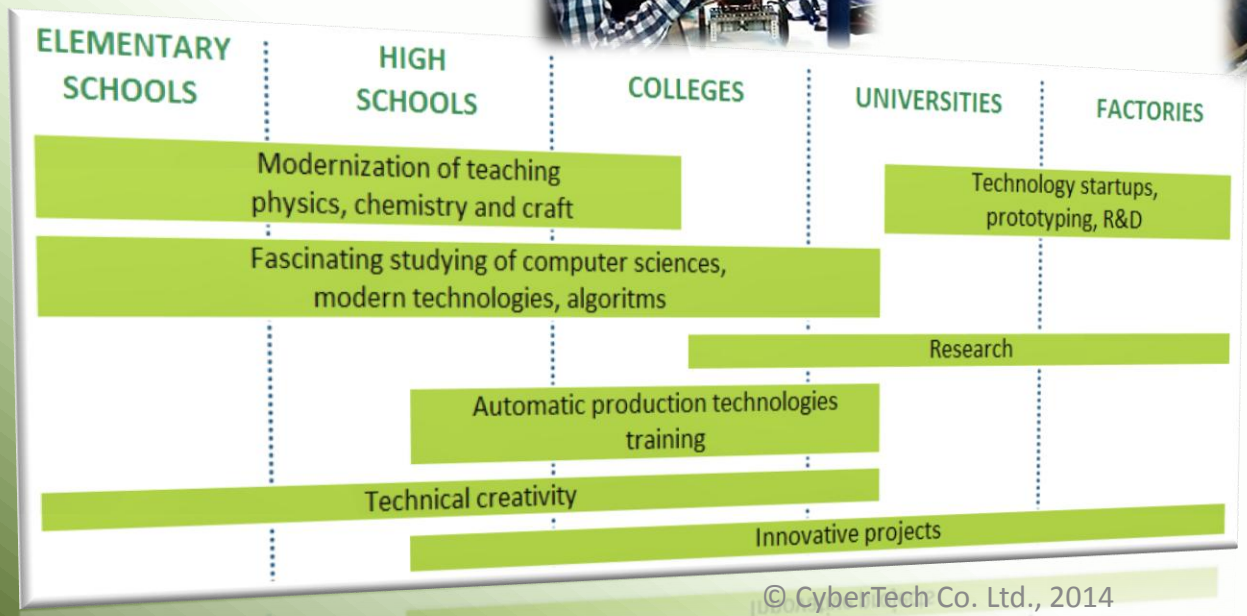
TRIK

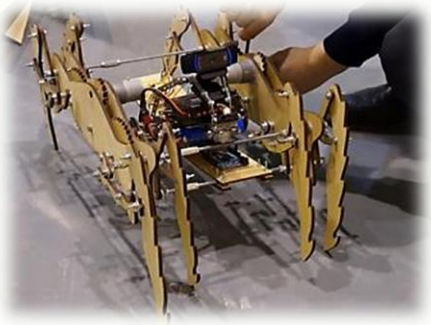
learn to invent the future

Educational market

$50M in Russia for TRIK

- Stage №1 of mass-market entering strategy: popularization & training
- Testing of business-model and technology development
- Evolving community of suppliers and consumers of TRIK-based solutions





Managing founders: **over 100 years** experience in cutting edge tech, science & business

- CEO
- Recognized cybernetics education enthusiast (lecturing, organizing competitions, and other educational activities)
- Software development project management experience
- Has previous business experience
- Over 100 of publications & presentations
- SPbSU alumnus & lecturer

- Chief HW Architect
- Head of HW engineering dept. of “Lanit-Tercom”, Inc
- Chief architect & project lead of a number of successful HW projects for MoD and famous enterprises
- AG SPbGU aka №45 ’85
- SPbSU alumnus

- Development Director, investor
- Seasoned lead programmer with projects management experience
- Worked for 4 startups
- SPbSU alumnus & lecturer

- Angel investor
- Prof., Dr.Sc.in Math, Head of SE dept. of SPbSU
- Founder & CEO “Lanit-Tercom”, Inc.
- Angel & mentor of 6 tech startups from
- RUSSOFT board of directors member
- ACM and IEEE CS member

- Angel investor
- President of “Macro Group” Ent.
- Angel & co-founder of 4 engineering startups
- Founder of «2R Partners» VC fund
- Radio engineer diploma, lawyer, MBA
- Graduate of EMBA 2013, GSOM SPbSU & HEC Paris

Deal structure

- Post-money: $13M
  - Discount rate = 30%
  - 2018 revenue (LTM) = $21.4M (discounted)
  - 3 times free CF 2018 = $14.1M (discounted)
  - Berkus : $12M
    - Financing history: $400K in 1 year
    - Previous experience and technologies ~ $5 mm
    - Patents pending
    - Technical and business experience of core team & strong mentors
    - Strategic relationships with government, schools, universities.
- Break-even point: end of the 1st year
- Exit 2018, STRATEG

Deal offered: $2M (2 rounds) for 15% shares

Appendix

Key partnerships	Key activities	Value proposition	Customer relationships	Customer segments
▪ The Ministry of Education and Science of Russian Federation, regional educational committees, Municipal educational authorities ▪ Universities ▪ Contract manufactures ▪ Complementary product manufactures ▪ Dealers, distributors ▪ Retailers	▪ R&D activities ▪ Establishment educational and industrial robotics platform standards ▪ Sales and distribution ▪ Marketing ▪ Platform management ▪ Supply chain management ▪ IP protection	▪ Unified easy-to-use smart robotics platform ▪ Infinite opportunity for technical creativity in designing and programming intellectual robots ▪ Increase interest and productivity in educational process (edutainment)	▪ Personal contact with opinion leaders ▪ Social media marketing ▪ Close relation with professional community	▪ Schools and Universities: officials, teachers, professors, (opinion leaders) ▪ Pupils of the senior classes of physical-mathematical schools and students of technical universities and their parents
	Key resources		**Channels**	
	▪ R&D forces ▪ Financial ▪ Marketing ▪ Opinion leaders ▪ IP patents		▪ Robotics and cybernetic clubs ▪ Robotics contests ▪ Master classes ▪ Direct sales forces ▪ Retail chains ▪ Online sales	

Fabless company . Technology leader strategy. Technology and brand development. Marketing through schools and universities. Compatibility with popular kits and globally available parts. Regular renewal of HW platform. Partnership with designer kits producers, licensing of controller and algorithms of unified platform TRIK.

Cost structure	Revenue streams
▪ R&D investments ▪ Maintaining and developing platform ▪ Marketing expenses	▪ TRIK robotics construction set sales ▪ Controller sales ▪ Expansion modules and accessories sales ▪ TRIK Studio appstore/gallery

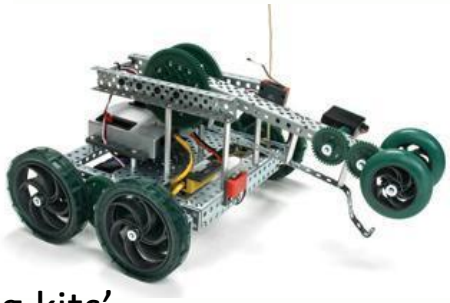
Market

- On the rapidly evolving personal robotics market there is no HW&SW solution for rapid prototyping of robotics and embedded smart systems.
  - DYI sets of up to $1000 require deep understanding of electronics, schematics, and system programming.
  - 1-2 man-month investments and corresponding product development delay results in time-to-market failure. Variety of incompatible sets is recognized as the reason of high costs in means of time & money of choosing right platform, tuning it with custom in-house solution, and maintaining later.
- Fragmentation and heterogeneity of robotic platforms slows R&D and new product development in the areas where automation is just an auxiliary tool (biotechnology, prototyping solutions for agriculture, production of new materials, etc.)
- Presented on the market robotic design kits do not correspond to the modern concept of the level of "high-tech".
  - Exciting teaching subjects using robotics (STEM Robotics) encounters a rapid drop in interest among high school students, where support for self-motivation is especially important.
  - Schools are looking for tools to upgrade educational programs under the funding allocated.
- There is no unified solution suitable for continuous use from school to university.
- Lack of industrial, professional and educational standards for service and personal robotics area slows development.

Before TRIK …

.. there were 2 different kinds of products:

kits for kids



&

boards for nerds

Toy & engineering kits' electronics is too obsolete for modern problems & tasks

Do not fit expectations for "smart device" and children loose interest very fast

Some leading companies tried to upgrade their controllers but totally failed

	Productivity	Extensibility	Video/Audio	Solution for	Availability
TRIK	✓	✓	✓	✓	✓
Lego		✓		✓	✓
Fischertechnik		✓		±	±
Vex		±		±	±
BIOLOID					±
Raspberri Pi	✓	±	✓		±
Arduino		±		±	✓

Modern single-board computers (SBC) have significant computing power, but do not fit "easy to use" requirement

Multimedia SBC is not enough to control autonomous robot

DYI products require diploma in engineering and MSc in CS to use

TRIK solution

- Unified robotics platform TRIK is a HW&SW solution, based on outstanding TRIK cybernetic controller with high-quality system software, advanced algorithms, and visual programming environment TRIK Studio
- Special attention is given to industrial, professional and educational standards in the field of robotics.
- TRIK platform will allow creators of new solutions to focus on their tasks.
  - 8 startups & research groups accepted TRIK as the base prototyping solution.
- Educational kit realized with TRIK allows one to build robots comparable in intelligence with the best models present on the market in price range below $1000.
- Building and programming were made simple even for beginners.
- Current state of the project (by Feb 2014)
  - Developed industrial design documentation pack for full TRIK kit.
  - Filed an application for a patent "Device for management of cyber-physical systems , primarily for the control of mobile robots and / or unmanned aerial vehicles ."
  - Produced 50 sets of educational designer TRIK for trial operation. For trial operation concluded agreements on cooperation in the field of education with partner educational institutions.
  - Ordered production of 1000 kits.
  - The project became a part of the national technological platform alliance for "Mechatronics Technology , embedded control systems , RFID and robotics " http://tp25.ru/
  - A dialogue with the Russian Ministry of Education
  - Project awarded the highest index of investment attractiveness AAA at Russian Startup Rating, became resident of Skolkovo, got golden medal on “Robofest 2013” (largest Russian event on robotics)

Business development

Aims

- In 2014 : Entering the Russian market with a comprehensive solution for educational institutions and spread it on the leading educational centers, schools and universities list of the top 100 .
- By 2018 : Large-scale penetration of the educational market CIS product line for Technical Sciences - 100,000 educational kits TRIK.
- By 2020 : Become a robotic platform number 1 in the world for home and educational robotics and technical creativity.

Steps

- Release cheap set for the mass market.
- Popularization of educational robotics and entertainment of technical creativity. Franchise "Robotics for kids and parents" to small towns and regions with low incomes.
- Participation in the development of industrial, professional and educational standards.
- Enter European market with a specialized solution.
- Enter DIY market of Southeast Asia.
- Enter U.S. market through crowdfunding.
- Organize of a system of regular add useful functionality through expansion modules and update the hardware platform.
- Implement the concept of the competition on the basis of controller TRIK (every 2 months in accordance with the overall schedule of the robotic competitions) .

Russian market

- Total educational Russian market in 2012 was 831,2 bln RUR (over $28B).

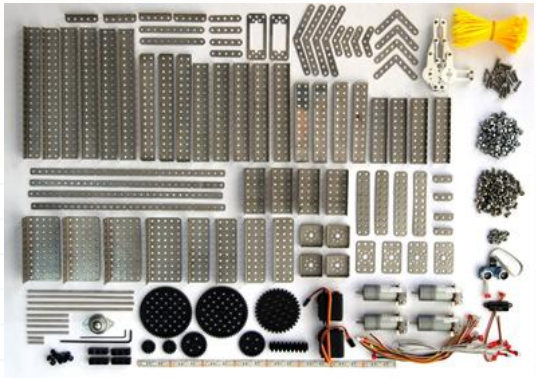
- 50 000 schools and universities (20 MM pupils and students)
  - Federal stimulation programs
    1) Federal program of education development
    2) Regional educational programs
    3) Federal program of education renewal by modern technologies
  - Aim: TRIK lab in every school by 2020 (like PC-classrooms were introduced before)
  - 20 B RUR ($570MM)
- 20MM families with children (> 15 % of moderate income)
  - Aim: TRIK kit as a tech gift instead of the next smartphone.
  - 100 B RUR by 2020 ($2.8 B)

+ Kazakhstan
+ EU market
+ Licensing of TRIK controller to designer kit producers
+ Global market sales of TRIK solutions

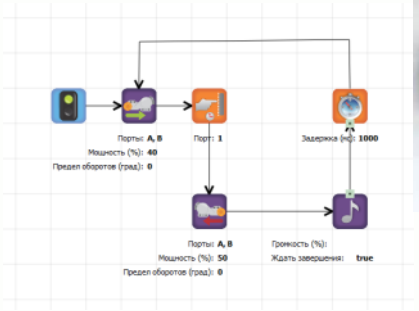
Product

- TRIK controller (1 patent pending, 3 applications in progress)
  - 3 processors for concurrent speech & vision , sensors & actuators control and communication & networking
  - Compatible with popular robotics periphery and leading kits
  - Full software stack from hardware drivers up to advanced action planning algorithms
  - Any popular programming language can be used
  - Designed for Cloud Robotics and ready for Internet-of-Things Era

- Kit for personal and educational use
  - Designed by best engineers
  - Contains everything one need to create 12 models
  - Compatible with popular kits



- Programming environment
  - Designed with simplicity of use in mind
  - Allows to create custom visual languages per robotic model
  - Based on previous research (scientific publications available)



- Solution for Educational Institutions
  - For schools & universities
  - Curricula included
- Web-based application store with configurable software
  - To deliver new apps to end-users

Semiannual plan	Investment ($ mm)	Action plan	Income plan
2014-I		Start of production of 1,000 units. Start of sales (online and organizations).	Sales revenue $0.17mm
2014-II	1	Expanding the product line. Completion and launch of sales of educational solutions. Issue additional units of 1,000.	Sales revenue $0.57 mm
2015-I	1	Escalating production rates +30%. Organization of a system of retraining teachers. A version of the controller for professionals. Start of sales in Europe and the U.S.	Sales revenue $0.86mm
2015-II		Escalating production rates +30%. Opening a network of regional offices (4 regions).	Sales revenue $2.85mm
2016-I		Escalating production rates +30%. Running franchise robotic clubs and entertaining events & activities.	Sales revenue $2.9 mm
2016-II		Escalating production rates +30%. Issue cheap controller for the mass market.	Sales revenue $4.3 mm
2017-I		Escalating production rates +30%. Organization representative in the territory of the Customs Union and the start of sales in CIS countries	Sales revenue $4.9 mm
2017-II		Escalating production rates +30%. Organization representative in the territory of the Customs Union and the start of sales in CIS countries	Sales revenue $5.7 mm
2018		Exit strategy chosen, exit plan prepared	Sales revenue $25.7mm EBITDA $4.2mm
TOTAL	2