

Assignment 1. CNB Project Originating

Project proposal

“Crash and Burn” labs

Section 1. Executive summary

Today in Kazakhstan higher education system we are facing challenges with delivering qualified knowledge to future specialists. Student usually get the basic knowledge, almost useless in the field they going to be hired for the very first time. Graduates does not have any portfolio and even good fields in CV, unfortunately. Current situation with university laboratories is when the equipment is located “behind the protective glass”. In very rare situations universities can purchase licenses for simulators. And all this situation leads to the lack of sufficient knowledge. Familiarizing students with real equipment strengthen their confidence.

Project's intended impact

In current project I’m pleased to introduce new vision of delivering useful knowledge, exciting approach of producing talented workers – Crash and Burn labs.

Current laboratory is the new concept of giving empiric knowledge, industrial skills, the expertise that students will immediately use in the field after graduation.

Crash and Burn labs (thereafter CNB labs) is the new approach where the students can touch the high-tech equipment, can get the proof-of-concept, can test some catastrophic for production environment scenarios, generally speaking, crush something and see consequences in the safe environment, but with real equipment.

CNB labs can give a new breath in daily educational process. Can deliver boring material as an exciting journey. Can strengthen the knowledge and confidence, raise excitement to IT world. Can steer the students to the right direction.

The problem project solves.

How project solves the problem.

#	The problem	CNB labs solution
1.	No practical knowledge	Delivers industrial course based on practical sessions and laboratory works
2.	Knowledge that delivered is outdated due to continuous improvement of technology	Keeps a fingers on the pulse involving experts from the field.
3.	Elective subjects (disciplines) are chosen improperly. There is no any chance to overview subject before selection.	Labs are transparent. Anyone can watch the current sessions, get introduction to curriculum.
4.	Graduates does not have initial knowledge to pass onboarding faster.	Labs are always improving. Tasks are taken from real life challenges in IT field
5.	Companies cannot narrow search for appropriate job candidates.	Labs will conclude a partnership with big companies operating in Kazakhstan (vendors and their customers). One of the advantages to those companies is the transparent search for talents from CNB labs graduates.
6.	Graduates does not have industrial knowledge and proof (certificates, badges).	Labs will get acknowledgement and permission to issue a certificated and digital badges, which can be linked to professional networks.
7.	Difficulties of allocating budget for purchasing expensive equipment which will be outdated in few years.	Labs will conclude a partnership with big companies operating in Kazakhstan (vendors and their customers). One of the advantages to those companies is no charge for recycling and charity for education.
8.	Impossibility to deliver labs and practical sessions online in today's realities.	Labs developing approach of delivering online sessions in case of impossibility to study offline.

Section 2. Project background.

While delivering course "Computer Organization and Architecture (COA)" I found a lack of practical knowledge in course content. The only practical labs was a crimping

a RJ-45 connector. The course is delivered as an industrial. But there wasn't any hint of industry.

Current course was delivered mostly by the specialists which have a background from the field. And while sharing their expertise from the field most of students has an excitement to touch the equipment. That was a starting point for developing an idea to build a little cell of alma-mater for future specialists.

First hedge of brilliant idea was a budget. For that time University had a huge plan to purchase a server equipment for new laboratory. But the problem was that the well-equipped server costs almost as a single flat in the market. Pretty expensive toy in student's hands.

Another problem - server equipment is getting outdated every quarter.

Purchasing expensive equipment can be useful to share computational resources by virtualization and using those equipment as a virtual platform to test loads. But it still impossible to give practical knowledge on hardware. What if some of the students want to become: Datacenter Hardware Specialists, Field Support Engineers for any server equipment vendor, ICT specialist etc. IT faculties are focused on software, coding, modelling, visualizing. None of them are worried about hardware. Computer Organization subject is mostly considered as a fundamental to understand computer. But they missing the main idea – COA must deliver “what's inside” sessions, interoperability of PC components. And if some students have a feeling of crept into the soul hardware interest, then those students can dive deep into COA2.

Project requirements:

1. Project must be separate from the University. It must be independent project, which can conclude a partnership with the University. It must be scalable. Any University can apply for partnership and open new horizons. Otherwise it will become a boring stuff.
2. Project should get international recognition to be able for issuing a proof of knowledge.
3. Project must have a main partnering contributors in the face of big size businesses.
4. Project must be delivered by experts from the field.
5. Project must adopt best practices on nowadays streaming methodologies to be able to deliver classes online.
6. Project must follow SMM requirement to be in touch with progressive youth and to bring transparency.

Analogs:

1. Biggest IT certification organizations, such as CompTIA etc.
2. Penetration test labs.
3. IT performance testing labs.

Section 3. Solution and approach.

Project is aimed to:

- deliver qualified knowledge for the students
- eliminate waste of IT equipment
- reduce costs related to recycling
- repurpose old equipment
- fill the gap between theoretical and practical knowledge
- close gap between talented graduates and head hunters
- give ability to prepare future specialists in the right way.

Project will deliver:

- clarify demand of required job candidates
- best solutions for big size companies on handling decommissioned equipment
- transparency
- clear carrier guidance for future graduates
- proper selection of elective subjects

Expected timeline:

1 year

Scrum sprints will be set during academic semester.

Stakeholders:

1. Founder
2. Co-founders

3. Sponsors (planning to participate in international grant programs)
4. University
5. Partnering companies
6. Students
7. Ministry of Education

Section 4. Financial information

Main equipment will be provided by partnering companies.

Classes, lab rooms, staff rooms will be provided by University.

Salary for teachers and founders, domains and hosting, miscellaneous expenses will be covered by international grant.

Section 5. Additional documents

- Concept patent
- Syllabus
- Curriculum
- Business plan
- Scientific articles
- Memorandum of understanding with University
- Memorandum of understanding with partner University

Section 6. Conclusion

Current project is:

- beneficial for society
- conceptual in developing new educational approaches
- beneficial for environment (eliminate waste, reduce recycling)
- beneficial for companies in avoiding expenses, getting qualified talents for future hiring and for brand recognition.
- beneficial for Universities in transforming to new methodologies and approaches in education
- another step further in digitalization.

Business case

Crash and Burn labs is the new approach of delivering empiric knowledge to future specialists.

It closes the historical gap between university abilities and industry requirements.

Benefit for University

University can conclude such partnership to achieve a high level of delivered expertise, and graduate qualified and prepared specialists with excellent confidence to the market. Universities also will get benefit from certifying their students and filling up the e-Portfolio. Compatible graduates are the best measurement of University's success and overall ratings.

Due to forecasting difficulties University will benefit from transferring all the financial burdening to CNB labs. While allocating budget to more sufficient projects. University will untie procurement and allocate human resources to contribute in overall success.

Benefit for Partners

Partnering organizations will comply with ecological obligations without any money loss and contribute in education development as a Maecenas.

Partner will also develop the brand recognition, especially vendors. Vendors will be sure that graduates will be familiar with their equipment and will contribute in brand promotion in many fields they will be hired as a specialist.

Some of the biggest international or local companies has a target for supporting science, organizing forums, conferences etc. This project will be best support for education without real money investment, only decommissioned equipment.

One of the main goal of CNB labs is transparency and avoiding gap between talented graduates and positions in prestigious companies. Usually it is quite complicated to HR departments to find truly talented well suitable candidate for position. With transparent talent search option for partnering organizations CNB labs gives access to detailed appraisals of each student who passed CNB course, their expertise etc.

Benefit for Organization related to Education that provide grant for our project.

International Educational organizations will benefit from current project by building a network of partnering Universities, by supporting expertise exchange between them. Also benefit from driving brand recognition, because if CNB wins grant, then organization will mentioned as a main support for current project

Benefit for students/graduates

Graduates will get the knowledge which is needed right here and right now. They will have a good starter portfolio and impressive lines in CV. Also they will get proof of knowledge and visibility to hiring companies.

First year students will have ability to make conscious choice whether they prefer to choose current subject which is delivered by CNB labs

Risks

#	Risk	Mitigation or Plan B
1.	Loss on grant financing from International Educational Organizations	Attempt to apply for local grant financing, for example governmental grant from Ministry of Education and Science.
2.	Poor excitement from partners	Accept risk
3.	Impossibility for scalability to another universities	Seek for international recognition, offer concept to universities abroad to raise excitement.
4.	Decommission cycle could not be synchronized with start of educational year	Teachers as the technical expert can adapt for situation while keeping excitement of audience and up-to-date course content

Project objectives

By the end of second trimester for second year of study students who choose elective course “Computer Organization and Architecture 2” will participate in brand new training. We will get more than MVP, but really working example of CNB labs delivered for students.

Before the second trimester syllabus of the subject will be finalized and will be ready for dean’s approval.

Minimal equipment for beta testing will be provided and tested by founder before trimester. University will approve support for infrastructure for opening labs.

Documents for grant financing will be ready in the middle of the trimester. CNB will apply for international grant with the in accordance with all the regulatory requirements.

Also in the middle of the trimester CNB labs together with University management will organize official opening ceremony. Which will gain visibility for CNB labs.

All the development and improvement tasks will be set as backlog for scrum sprints.

Successful and activist students will be involved into the promotion of CNB labs. As result they will get recommendation letters from instructor, which are have experience from the field, recognition certificates from deans office, and also proof of expertise.

According to results of the trimester and collected material (like video-recordings, photos, detailed description of the course, feedback from second year students) subject will become transparent for choosing by next year students.

Near to the end of trimester CNB labs will find the way to be accredited locally or by international organization to be able to certify the participants.

In the preparation for next education year CNB labs will find at least to main partner-contributor and conclude bilateral agreement.

Starting from the next educational year CNB labs will consider scalability to other universities.

Assemble Project Team

Teacher – is the person who will deliver the courses offline and in some circumstances online. He must have an appropriate expertise level, have a background from the field or effective part-time worker from the field, to keep on technology changes and be aware of novelties. He will participate in syllabus and common material development, and will refresh material in yearly basis.

Project management members – they will advise on process flow and will drive partnership and application to international grants. They will also contribute in developing internal documentation, in project promotion and organizational moments. They will be responsible for generating backlog and reviewing sprints.

Student activists – will be responsible in promotion of CNB labs in social networks, in generating creative ideas, media support etc.