MINISTRY OF EDUCATION AND SCIENCE OF REPUBLIC OF KAZAKHSTAN
SULEYMAN DEMIREL UNIVERSITY
ENGINEERING FACULTY


*Department of Computer Engineering*

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# Personalized Information Systems Enabling Technologies and Jameco Education Model

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6M070400– «Computing systems and software» speciality

**Kaskelen, 2013**

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Master dissertation

# PERSONALIZED INFORMATION SYSTEMS ENABLING TECHNOLOGIES AND JAMECO EDUCATION MODEL

6M070400– «Computing systems and software» speciality


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TABLE OF CONTENTS

## Түйіндеме

Бүкіл әлемде,дамыған немесе дамушы еллдерде кәсіби-техникалық мамандарға деген сұраныс бұрын сонды болмағандай өсіп отыр. Қазақстандағы колледж және кәсіптік мектептердің ең басты мақсаты-өз ісінің нағыз мамандарын даярлап шығару.

Қазіргі таңда Қазақстан қарқынды дамып келе жатқан мемлекет болып табылады.Кәсіби-техникалық мамандарға деген үлкен сұраныс,мемлекетіміздің әр қалаларында жеке және кәсіптік-техникалық мектептерінің көптеп ашылуына түрткі болды.

Алайда бұл оқу орындарының оқу бағдарламасының әлсіздігі немесе бұл саланың табыс көзіне айналуы кәсіптік техникалық мектептерінің беделін түсіруіне әкеліп соқты. Онымен қоса мұндай мектеп түлектерінің жоғарғы оқу орындарына түсуі білім сапасының едәуір төмендеуіне әкеліп соғуда. Қазіргі таңда 01.01.2013жылдың мәліметі бойынша Жамбыл облысында 40колледж және 20 кәсіптік техникалық мектеп өз қызметтерін атқаруда.Бұл оқу орындарында 38500 білімгер білім алуда.

2012 жылы Қазақстан кәсіптік-техникалық мектеп және коледждерде сапалы білім алуды қамтамасыз ету үшін бірқатар инновациялық өзгерістер енгізді. Біріншіден коледждерге түсу үшін белгілі балл мөлшерін жинау міндетті болды.Мемлекеттік жоғарғы оқу орындарының конкурсқа түсудің төменгі баллы 70 балл,ал жеке ЖОО төменгі өту баллы 50 балл болып бекітілді

Бұрыс ақпарат таратудын нәтижесінде, халықаралық деңгейде білім беретін Жамбыл қазақ-түрік есеп-экономикалық колледжінің беделіне де әсер етті. Алғашқы жылдармен салыстырғанда студенттердің саны 20% азайды. (2011 жылы 400 студент болса, 2012 жылы 330 студент болды)

Қазақстан республикасы мен Түркияның арасында достық пен сенім өкілі болып табылатын,экономикалық ынтымақтастық дамуына маңызды үлес қосудағы Жамбыл қазақ-түрік есеп-экономикалық колледжі үгіт-насихат үшін бұқаралық ақпарат әдістеріне мұқтаж болуда, айрықша әлеуметтік саласын қамтитын. ( 1997-2013 жылдар аралығында түлектердің саны 842. Ал қазақ-түрік компанияларында жұмыс істейтін түлекттердің саны 315, яғни, 40% құрайды)

## Аннотация

Во всем мире, особенно в развитых или развивающихся странах, потребность в техническо-профессиональных людях стало более важным, чем когда-либо. Мир превратился в деревню квалифицированной рабочей силы, что становится все более важным в наше время.

Основная цель колледжей и профессиональных школ в Республике Казахстан: подготовить профессионалов своего дело.

Казахстан является развивающейся страной и в результате востребования профессиональных специалистов в разных городах страны открылись множество частных и профессионально-технических школ.

Однако из-за позднего внедрения стандартного обучения или явление очагом прибыли в глазах владельцев этих учебных заведений, множество частных и профессионально-технических школ в итоге потеряли престиж.

Кроме того, поступление студентов в высшее учебное заведение после окончание школы непосредственно приводит к снижению качества высшего образования. По состоянию на 01.01.2013 года в Жамбылской области действуют 40 колледжей и 20 профессионально-технических школ. В этих школах, около 38 500 студентов получают профессионально-технического образования.

В 2012 году Казахстан утвердил ряд инновационного образования, для успешного обучения и подготовки квалифицированных специалистов в профессионально-технических школах и колледжей.

В первых, при поступлении в колледж необходимо было получить определенное количество баллов. Проходные баллы для государственных университетов-70 баллов , а для частных университетов-50 баллов.

В результате широкого освещения средствами массовой информации этих негативностей, повлияло на репутацию Жамбылского казахко-турецкого учетно-экономического колледжа дающего образование на международном уровне. Число студентов, поступающих в колледж в прошлом году снизился на 20% по сравнению с предыдущим годом. (330 студентов в 2012 году, 400 студентов в 2011 году).Жамбылский казахско-турецкий учетно-экономический колледж, который является представителем дружбы и доверия между Республикой Казахстан и Турцией, а так же вносит важный вклад в развитие экономического сотрудничества между двумя странами, нуждается в новых способах и методах для агитации средствами массовой информации, в особенности в социальной сфере.

## Annotation

All over the world, especially in developed or developing countries; the need for professional and technical people has become more important than ever. The world has become a village qualified workforce, that is becoming increasingly important in our time.

The main aim of the college and vocational schools in Kazakhstan: prepare individuals for specialized professions.

Kazakhstan is a developing country and their profession in a lot of experts on the state of the country as a result of violence, and it needs a lot of privately owned schools and vocational high schools were opened.

Standards, as well as some of the state now come to these schools and colleges and the owners see these institutions as a result of the gate to make money in this profession very seriously and colleges suffered a serious loss of prestige.

In addition, college students who finish school, they directly are led to decline in the quality of university education. There are 40 colleges and 20 vocational high schools in Zhambyl state on 01/01/2013. In these schools, approximately 38,500 students receive vocational and technical education.

Kazakhstan has signed a number of educational innovation to put an end to all these deficiencies, and to train professionals and qualified vocational colleges and vocational high school students to succeed in college in 2012.

First, college admission's test was required to obtain a certain score. For state universities 70 points, private universities 50 points.

As a result of extensive media coverage of these negativities to find a place in the state of Zhambyl, international quality of Kazak-Turkish of economy college was affected. The number of students at the entrance to college last year decreased by 20% compared to the previous year. (330 students in 2012 to 400 students in 2011)

Friendship and trust between Kazakhstan and Turkey, and at the same time which is representative of the economic cooperation between the two countries is an important contribution to the development. (1997-2013 Number of Graduates 315 842 Number of graduates working in companies that Kazakh Turkish cooperation is up to 40%)

## LIST OF TABLES

| Acronym | Definition |
|---|---|
| ADSL | Asymmetric digital subscriber line |
| AES | Advanced Encryption Standard |
| ANSI | American National Standards Institute |
| ARP | Address Resolution Protocol |
| ATM | Asynchronous Transfer Mode |
| BGP | Border Gateway Protocol (routing protocol) |
| EIGRP | Enhanced Interior Gateway Routing Protocol |
| EOF | End Of Frame (HDLC, etc.) |
| FCS | Frame check sequence (Ethernet) |
| FDDI | Fiber Distributed Data Interface |
| FTP | File Transfer Protocol |
| GBIC | Gigabit interface converter |
| Gbps | Gigabit per second |
| http | HyperText Transfer Protocol |
| https | HyperText Transfer Protocol Secure |
| ICMP | Internet Control Message Protocol |
| IEEE | Institute for Electrical and Electronic Engineers |
| IMAP | Internet Message Access Protocol |
| IP | Internet Protocol |
| ISDN | Integrated Services Digital Network |
| ISP | Internet service provider |
| kbps | Kilobit per second |
| LAN | Local area network |
| LLC | Logical link control |
| MAC | Media access control |
| MAN | Metropolitan area network |
| Mbps | Megabits per second |
| MDF | Main distribution frame |
| MIB | Management information base (SNMP) |
| MPLS | Multiprotocol Label Switching |
| NAC | Network access control |
| NAT | Network Address Translation |
| NIC | Network Interface Card |
| PAT | Port address translation |
| PC | Personal computer (host) |
| POP3 | Post Office Protocol, version 3 |

# INTRODUCTION

This century, we are witnessing an information revolution. We are being constantly flooded with information, be it on the internet or due to other sources (like emails), and it is becoming increasingly difficult to manage such huge amounts of information.

An even more formidable task is to find something relevant through this great mass of data. The problem has
more or less been addressed for the internet, with the advent of various good search engines (like Google) which can find out the required data given a few keywords. Most of these search engines make use of the well understood hyperlink structure of the web.

This problem of efficient information retrieval however, persists for the data stored on the hard disks of our computers.
One of the primary reasons for this is the absence, till date, of any information model that relates documents for a desktop system in the way that hyperlinks relate documents on the web. Moreover, the problem is escalating day by day with the burgeoning size of secondary storage. Consequently, it is becoming increasingly difficult for a user to store data logically and access it easily.
We believe that each of the units of information on a user's hard-drive collectively form an information system that is much more than a decoupled collection of information units.

The information system that is built out of these units is usually not modeled in explicit form at any place, but rather, it resides in the mind of the user. Currently, a user stores her information in a hierarchical fashion using files and directories and tries to encode this information system in their naming conventions. However, the problem with this approach is that, firstly it is very difficult to maintain and is not scalable.

Secondly, what should a user do when a given piece of data qualifies for being kept in multiple directories and thirdly, what if the user wishes to arrange the data according to a completely new classification scheme or someone else takes over the system (eg. in a corporate setting). The aim of this project is to solve this problem, so that the user does not have to care much about how to arrange data and is still able to easily retrieve the required data. To do this, we propose a new information model for storing information in a desktop system.

# 1 PERSONALIZED INFORMATION SYSTEMS

## 1.1 Definition of personalization

Several attempts have been made to define personalization by the industry practitioners and the academic researchers.

Some of the representative definitions include:

*"Personalization is the ability to provide content and services that are tailored to individuals based on knowledge about their preferences and behavior"* [1]

*"Personalization is the combined use of technology and customer information to tailor electronic commerce interactions between a business and each individual customer. Using information either previously obtained or provided in real-time about the customer and other customers, the exchange between the parties is altered to fit that customer's stated needs so that the transaction requires less time and delivers a product best suited to that customer"* [2]

*"Personalization is the capability to customize communication based on knowledge preferences and behaviors at the time of interaction"* [3]

*"Personalization is about building customer loyalty by building a meaningful one-to-one relationship; by understanding the needs of each individual and helping satisfy a goal that efficiently and knowledgeably addresses each individual's need in a given context"* [4]

*Determining an exact definition for personalization is a bit of a conundrum. Personalization tends to be defined according to how it is implemented by various organizations and individuals. Kramer et al write:*

Personalization is a toolbox of technologies and application features used in the design of an end-user experience. Features classified as "personalization" are wide-ranging, from simple display of the end-user's name on a Web page, to complex catalog navigation and product customization based on deep models of users' needs and behaviors.

The Web offers an excellent environment for personalized learning, especially using objects. Personalized learning needs to use strategies that can address individual needs and promote individual success. It must also use technology to change the individual objects presented to each learner based on their individual needs. Personalization may take many forms as it adapts content, practice, feedback, or navigation to match individual progress and performance. For example, two individuals using the same instruction simultaneously may see

two completely different sets of learning objects. The greatest benefit of learning personalization is the system's ability to make complex instruction easier by presenting only the specific information that a particular learner wants or needs in the appropriate manner and at the appropriate time. Another wonderful benefit of personalization is that each time you personalize, you learn and store a little more about a learner's unique set of needs.

## 1.2 Areas of Personalization activities

There are several areas of activity where addresses personalization, in academia or in organizations, for example: Management, economics, marketing and sales, education, sociology, anthropology, medical sciences, clinical information systems and computer science. The main goal of personalization in ICT applications is to address the specific and differentiated needs and preferences of the persons that interact with them.

Personalized ICT applications (also named as Personalized Applications – PA) facilitate the interaction among the various actors that cooperate within an organization, and the interaction with information providers and information recipients. It allows people to have easier access to content and services.

The "individuality" of the consumer information is the key aspect in the personalization definition, implying that individual attributes, such as identity, preferences, constraints and provision (example, location and presence) have a potential impact on the personalization process. The personalization is done by the intelligence that is at the center of the communication.

### 1.2.1 Education (Personalizing Learning)

Personalization refers to the adaptation of the learning process and its contents to the individual learner's own personal characteristics and preferences. Personalized education presupposes and encourages individual difference and seeks to incorporate different ways to learn and different styles of acquiring knowledge and information. By tailoring the learning experience to the individual learner's own interests, abilities, and needs, personalized education enhances learners' level of motivation and sense of confidence. Accommodating the learning process to meet individual preferences through personal choice not only promotes the learners' ability to become more reflective on who they are but also on what they do not know and what they do not

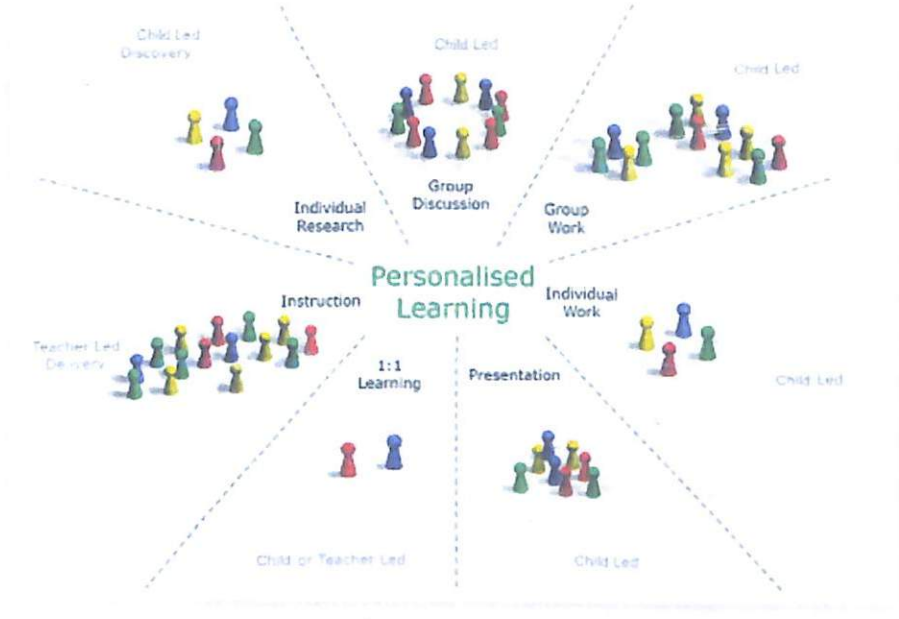
like. By making mindful choices, student can explore the range and depth of their understanding and become more aware of their strengths and weaknesses.

Personalization puts the students in the "driver's seat", so to speak. It promotes the learners' active participation in designing and constructing their own personalized learning environment. These techniques allow for better engagement, self-directedness and set the learning process to the depth appropriate to the students' understanding and abilities. The iClass pedagogical model seeks to incorporate personalization as part of its proclaimed goal to support self-regulating learning, which emphasizes the development of individual skills as well as life long learning that meets the individual's own identity and profile. Combined with iClass's strategy to opt for self-personalization, adaptation should be based on processes of learner's choice and exploration. I-class is therefore learner-oriented.Personalization can meaningfully contribute to a sense of competence and a sense of autonomy (two of the three significant conditions for fostering intrinsic motivation according to Self-Determination Theory; see for example Ryan &Deci 2000, and below) and trigger reflection of the learner on herself, the learning process, and the relationship between the two. By contributing to motivation and triggering reflection, as well as augmenting (in a more trivial way) the learner's sense of comfort in the learning process, personalization can contribute to learning in the deepest level. It has the potential to enhance understanding, long-term memory, transfer and applicability of learnt content, or in other words, learning how to learn and becoming an effective lifelong learner.

Five different drivers of personalization can be specified, each focusing on varieties of individual differences. First, cultural differences in the way people learn things or gather information (reading a book or newspaper, listening to or viewing electronic media, surfing the net, learning from other people, listening to lectures, and so forth). Second, language differences (students are not always using their native language). Third, differences in abilities. Fourth, learning styles. Fifth, accessibility needs (promotes inclusion).

That personalization in education not only facilitates better learning, but also caters teachers' needs in preparing/designing varied teaching/instructional packages. While iClass emphasizes self-personalization in education and is tailored to promote

students' development and reaching their own goals, personalization can also assist teachers in making desired changes in current learning practices.




Picture 1. Personalizing Learning

ICT can contribute to personalization to an extent that was unimaginable, unfeasible or uneconomical until a decade or two ago. By developing adequate tracking, profiling and matching capabilities, ICT can materialize the dream of several generations of educators and thinkers in the fields of constructivism, constructionism, learning styles, interests, intrinsic motivation, multiple intelligences, open-learning (or distance learning, as it is sometimes called now, which has been developed since the early seventies by the British Open University and later by other open universities, and has related to what is called here personalization), and special education. Mueller (et al 2001) has shown that the failure to incorporate personalization is one of the central causes for the failure of e-learning models and projects.

Learning, structuring, and individualization go together. Learning aims at mastering the structures that surround us and denotes the creation of corresponding internal structures: John D. Nolan points at the necessity to chunk and categorize in order to master new information (Nolan, 1973), while Jerome Bruner states that "unless detail is placed into a structured pattern, it is rapidly forgotten" (Bruner, 2003, p. 24). These findings of pedagogy are supported by neurobiological research. External structures we recognize and remember are represented in our brains by

neuronal patterns that are generated by the brain itself due to repetitive stimuli. (Spitzer, 2003, pp. 79). Consequently, creating internal structures (or: learning) depends on the learning individual.

In school, learning means to become acquainted with mindsets and specific structures of various subject matters. While many of these structures seem to be artificial at first, they have been found appropriate to model certain aspects of the surrounding environment. Hence, teaching means to reveal the structure of a certain topic and to support the construction of corresponding internal structures by means of learning activities that allow learners to apply their newly established knowledge or skills. Teachers have to know the basic structures of the content that is being taught. Furthermore, teachers have to be aware of structures that guide individual learning processes. Based upon knowledge about relevant structures, it is the teacher's task to provide a framework for the learners to structure their own learning processes. These three levels of structures have to be

considered when aiming at personalization of learning processes and de-serve closer examination.

Thinking about the structure of learning content has to deal with a certain topic. The author chooses the topic databases of the subject matter to point at the dual structure inherent in learning content.

When learning Informatics, learners are expected to apply control- and data-structures to create programs that provide a (dynamic) solution for a given problem. Contrary to that, when working with tools like databases, learners use structures to describe and/or investigate a certain (static) aspect of the world. Consequently, knowing about and working with structures has to be considered a key issue in informatics education.

But informatics education has to serve two different goals. On the one hand, the subject matter informatics deals with what is called informatics proper, focusing on "Fundamental Ideas of Computer Science" (Schwill, 1994) or "Great Principles in Computing" (Denning, 2003) and emphasizing (conceptual) knowledge about information and about the organization of hard- and software. This aspect of structuring has been described above. On the other hand, the subject matter informatics has to deliver skills (or: procedural knowledge) enabling one to use application software like text processors or spreadsheet programs. This part of informatics education is commonly referred to as "Information and Communication Technology" (short: ICT), and focuses on the structure of software tools.

While most of the topics in Informatics education are considered either part of ICT or informatics (proper), databases belong to both. Data-bases have become common

tools to store, sort, and retrieve data from various fields of knowledge, for instance, when being used as "mindtools" (in the meaning of: tools to think with) to organize content (Jonassen, 2006). Using databases this way mainly requires procedural knowledge to master the structure of the database software and to conceptualize the re-presentation of data in tables. In addition, techniques to design and implement databases are part of database education, as well. These topics stress the structure of the underlying relational representation of data and call for modeling and abstraction. Modeling and abstraction are considered basic concepts of informatics proper and represent the second dimension of database-structure Informatics education has to deal with.

Corresponding to these two levels of database structures, two different instructional patterns have evolved that guide the teaching of databases. The application-oriented approach to the structure of database software is

being addressed by certificate-based user training like the European Computer Driving License, and follows an instructional pattern that has been named practising skills This pattern provides examples of (in most cases flat-file) databases and focuses on entering, storing, retrieving and presenting data. Therefore, special attention is directed toward forms for data input or reporting tools, while the database core is neglected. The second instructional pattern has been labeled providing insight and emphasizes the underlying relational structure of data. Being inspired by database curricula at university level, this pattern follows the steps of conceptual database design, logical database design, data entry, and exploiting the database structure by means of database queries.

By providing two different instructional patterns, database education points at knowledge about the structure of the learning content and at skills to apply this structural knowledge as different aspects of content structure. Both of these complementary aspects have to be regarded when designing learning activities, and, at its best, both of them should be combined within a single pedagogical pattern.

Choosing which structures to teach is a prerequisite for teaching, but choosing how to present these structures to stimulate transfer into internal structures on the side of the learners is yet another prerequisite. Quite often teachers become aware that learning tasks, although deliberately chosen, miss the audience.

Researchers in cognitive mathematics discovered two different cognitive structures that guide the transfer of external structures into an internal representation. According to I. Schwank we have to "distinguish between a predicative structure, which is more concentrated on networks of relations and structures, and a functional structure, which lays preference on thinking in terms of effects and on organizing sequences of actions" (Schwank, 1993). Involuntarily, people employ one of these cognitive structures or the other. In doing so, they develop different perspectives for a given situation/problem and

use different strategies to comprehend its structure. Consequently, learning is at its best when the external representation of a situation/problem meets the preferred cognitive structure of the learner.

Learners who prefer a predicative point of view can be expected to underachieve, if learning tasks are presented in a functional way and vice versa. Therefore, to do justice to both types of cognitive structures, the tructure of the learning content should be presented in both ways. Mod-ern click'n code programming environments like Scratch or NXT-G give an idea of how to achieve this: Instead of textual coding, program instructions are represented by graphic icons that can be combined into runnable programs. These "programming bricks" are static elements that can form a structure providing a certain functionality). While the former supports a predicative approach to programming structures, the latter promotes the functional point of view considering the dynamics of a running program.

*Structuring through competence-oriented learning*

To decide upon the learning content and the way to present its structure is the teacher's share in structuring the learning process. But teachers can be catalysts, at the most: Construction of internal structures demands active participation of the learners, who have to take responsibility for their own learning process.

This guiding idea of self-organized learning has attracted broader attention in the face of competence-oriented education, corresponding to upcoming competence-based curricula that resemble outcomes-based education. This is "an approach to planning, delivering and evaluating instruction that requires [...] teachers and students to focus their attention and efforts on the desired results of education" . Competence-orientation supplements competence-based curricula with personalized/individualized learning: Learners should be enabled to follow an individual learning path, thus transforming predefined common and compulsory learning goals into individual learning goals.

With competence-orientation, learners need information about the learning objectives, about ways to reach their goals and about means to test whether they have succeeded or not, or rather: to what extent they have succeeded to reach the goals. To provide this information, a competence matrix (or: rubric) is the tool of choice: A competence matrix pairs rows with learning goals and columns with different levels of competence-acquisition where each cell contains a description of what one must do to prove that (level of) competence.

As each learner should be enabled to acquire a specific competence ac-cording to his or her abilities, the competence matrix indicates what the learner must be able to do in order to prove the acquisition of a certain level of competence. Additionally, a competence matrix can be used by the learner to mark the levels of the listed competences he or she has already reached. This yields an individual competence profile helping to decide on

further learning steps to improve the learner's competences. Furthermore, competence matrices should be accompanied by checklists of learning tasks, which list tasks designed to acquire a certain competence at a de-sired level. Learners turn to active learners when using competence matrices and checklists to choose tasks appropriate to reach a certain level of competence and according to the learners' individual abilities. Moreover these tools can be used by the to prove the success of their learning processes.

### 1.2.2 Personalized Medicine

Personalized medicine uses new methods of molecular analysis to better manage a patient's disease or predisposition toward a disease. It aims to achieve optimal medical outcomes by helping physicians and patients choose the disease management approaches likely to work best in the context of a patient's genetic and environmental profile. Such approaches may include genetic screening programs that more precisely diagnose diseases and their sub-types, or help physicians select the type and dose of medication best suited to a certain group of patients.

People vary from one another in many ways — what they eat the types and amount of stress they experience, exposure to environmental factors, and their DNA. Many of these variations play a role in health and disease. For example, the natural variations found in our genes could influence our risk of developing a certain disease, as well as how our bodies respond to that disease. The combination of these variations across several genes can affect each individual's risk of developing a disease or reacting to something in the environment, and can be one of the reasons why a drug works for one patient and not another.

Personalized medicine hopes to use these variations — both in the patient and in the molecular underpinnings of the disease itself — to develop new treatments and to identify the sub-groups of patients for whom they will work best. It can also help determine which groups of patients are more prone to developing some diseases and, ideally, help with the selection of lifestyle changes and/or treatments that can delay onset of a disease or reduce its impact.

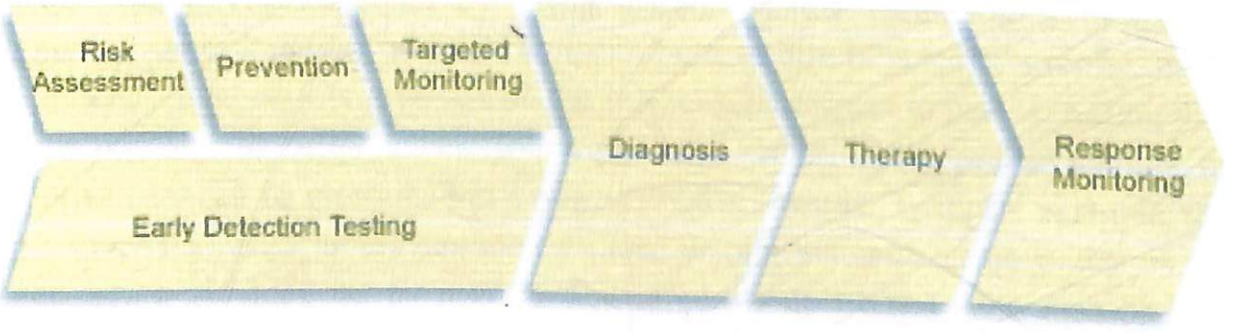
Personalized medicine is poised to transform healthcare over the next several decades. New diagnostic and prognostic tools will increase our ability to predict the likely outcomes of drug therapy, while the expanded use of biomarkers — biological molecules that indicate a particular disease state — could result in more focused and targeted drug development. Personalized medicine also offers the possibility of

improved health outcomes and has the potential to make healthcare more cost-effective.

Though sometimes described as a phenomenon of the future, personalized medicine is already having an impact on how patients are treated. Molecular testing is being used to identify those breast cancer and colon cancer patients likely to benefit from new treatments, and newly diagnosed patients with early stage invasive breast cancer can now be tested for the likelihood of recurrence. In another example, a genetic test for patients with an inherited cardiac condition can help their physicians determine which course of hypertension treatment to prescribe in order to avoid serious side effects.

Personalized medicine promises many medical innovations, and has the potential to change the way treatments are discovered and used. But the pathway to the development of personalized medicine is marked by the need to identify and address a range of public policy issues. The implications for current systems, such as payer and physician incentives, medical records privacy and clinical trial ethics, must be explored by all stakeholders, who will need to reach agreement on what modifications should be made. The way such issues are managed will affect the evolution of personalized medicine and shape its ability to prevent, diagnose and manage disease.

The paradigm of personalized medicine can be illustrated as follows:




Picture 2. Shema of Personalized Medicine

This arrow reflects the current and anticipated flow of health care services, and changing points of intervention, as medicine becomes more personalized. Early detection testing will continue based on large population risk (e.g., mammograms), while new forms of risk assessment will be incorporated (e.g., determining which women carry the genetic variation that increases their risk for developing cancer).

Though true prevention must occur before disease symptoms are present, better risk assessment enables more targeted monitoring (e.g., women with the genetic variation should have more frequent mammograms); followed by symptom-driven diagnosis, in which molecular monitoring could possibly identify disease subtypes that cannot be clinically determined. Such diagnosis may or may not lead to targeted therapy, but in either event we may also benefit from improvements in monitoring a patient's response to a particular therapy.

Personalized medicine has the potential to change the way that medicine is prescribed, and it could provide more targeted, efficient care with better outcomes for patients, ultimately leading to lower costs for everyone involved, says Jacqueline Penrod, an attorney with Semanoff Ormsby Greenberg & Torchia, LLC."There is a lot of excitement about the potential that personalized medicine has to really change the way we deliver health care to the benefit of patients, hospitals and insurers," says Penrod. "The technology being developed can help patients in a way that will be less costly."But much of the technology that potentially will drive personalized medicine to the forefront of the health care environment is still being hatched in laboratories as pharmaceutical companies develop products that could help improve dosing and patient education. Smart Business spoke with Penrod to learn how personalized medicine could change the face of health care delivery, and what steps a business can take to learn more and take advantage of its benefits.

Personalized medicine addresses the health care challenges of efficacy, safety and cost. It refers to customizing health care to tailor all decisions and practices to patients' needs. For example, by using genetic testing technologies to gather information about a patient, medical care can be carefully targeted. Currently, there are a number of laboratory products on the market with respect to genetic testing that allow a provider to better understand a patient's needs. Then, proper therapy or preventive care can be prescribed in a more effective manner. Take, for example, the drug Coumadin, used to prevent blood clots in patients with heart problems. A genetic testing product can be used to determine the best dosage for each patient, which helps doctors prescribe the best treatment, prevents hospitalization and return hospitalization, and ultimately, saves all players in the health care spectrum money. This concept of tailoring health care is a real breakthrough in an industry that is in a state of flux. While we do not know what the future of health care holds, we recognize an emphasis on improving the way health care is delivered to address those key issues of cost, efficiency and outcomes.

### 1.2.3 Personalized Advertising

The Internet and the digital communication technology revolution has dramatically increased firms' ability to target advertising accurately to specific consumers, and to use consumer information to personalize the content of the advertising. However, as online display advertising becomes personalized, firms run the risk that customers will find the advertising intrusive and invasive of their privacy, and that "reactance" will lead them to resist the ad's appeal (White et al., 2008). "Reactance" is a motivational state when consumers resist something they find coercive by behaving in the opposite way to the one intended (Brehm, 1966; Clee and Wicklund, 1980; Brehm, 1989).This sets up a tension for firms who seek to use the huge amounts of data at their disposal to improve advertising outcomes, but who also seek to minimize the potential of consumer resistance.

Nowhere has this tension been more pronounced than on social networking websites like Facebook and MySpace. Social networking websites now account for 23 percent of online display advertising (Cormier, 2010). They have also collated a huge amount of personal data from their users and offer advertisers proprietary ad networks that push the boundaries of tailored advertising. Consumers might see personalized ad content on such sites as more appealing and more connected to their interests, but they also might conversely see it as "not only creepy, but off-putting" if they feel that the firm has violated their privacy (Stone, 2010)1.

To reassure customers about their use of customer data, some social networking sites like Facebook are experimenting with new technologies that allow consumers explicit control over how much information about them is publicly available. Theoretically, this could minimize the potential for reactance and improve the performance of online advertising, because behavioral research has emphasized the importance of consumer perceptions of control in mediating reactance (Taylor, 1979). This is the case even if the controls introduced are only tangentially related to the area where reactance may be invoked (Rothbaum et al., 1982; Thompson et al., 1993). For example, cancer patients are more likely to comply with restrictive treatment regimes if they are given perceived control over another aspect of their medical care. However, there is always the risk that such introducing privacy controls might sensitize users to privacy concerns, increasing the likelihood of reactance and making advertisers who try to use personal information more unpopular. This paper

assesses how these new technologies for giving customers control over their personally identifiable information might influence the effectiveness of online display advertising on social networking websites.

We use data from a randomized field experiment conducted by a US-based non-profit organization (NPO) to optimize its advertising campaigns on Facebook. These campaigns were shown to 1.2 million Facebook users. The NPO's aim was to raise awareness of its work improving education for women in East Africa. The NPO randomized whether it explicitly personalized the ad copy to match the user's profile. For example, sometimes the text of the ad explicitly mentioned a celebrity of whom the user had specified on their profile that they were a fan. On other occasions, the NPO showed the same group of fans an ad that was deliberately generic in the text and made no explicit mention of the celebrity.

In the middle of the field experiment, Facebook announced a large and well-publicized shift in their privacy policy. The aim was to reassure users, given mounting media criticism, about how their data were used, by giving them more control over their privacy settings and the extent to which their personally identifiable data could be tracked or used by third parties. This change did not, however, affect the underlying algorithm by which advertising was displayed, targeted and personalized, since the advertising platform used anonymous data. The NPO had not anticipated there would be such a change when it launched its field test of the ads. However, the fact that this occurred mid-way through the field experiment is valuable for measuring the effect of a change in privacy policies on advertising effectiveness, while circumventing the usual endogeneity issues.

We have data on the number of times each ad was shown to a unique user and the number of times it was clicked on for each ad for a five-week period spanning the introduction of the new privacy controls. Empirical analysis of both campaign-level and individual-level click-through data suggests that personalized advertising was over twice as effective at attracting users to the NPO's Facebook page after the shift in Facebook policy that gave users more control over their personal information. There was no significant change in advertising that was shown to the same people but used a generic message over the period. This is to be expected, because such ads do not make clear to consumers whether their private information is being used to target.

We ascribe causality to our estimates based on the assumption that there were no underlying changes in user behavior that coincided with the introduction of privacy controls but were not directly attributable to the introduction of these controls. To ensure the robustness of this assumption, we check that there was no significant change in the ads shown, the user composition of Facebook, use of the website, or advertiser behavior during the period we study. We also control for the amount of publicity surrounding privacy issues at the time of the introduction of privacy controls. Controlling for media attention either by including direct controls or excluding the days at the height of the media storm leads us to estimate a smaller, though still economically significant effect. Last, we show that there was no change in how likely people were to sign up for the NPO's news feed, suggesting that our result is not an artifact of stimulated curiosity.

To explore the underlying mechanism, we build on existing research that documents that "reactance" to personalized advertising is greatest when the information used is more unique (White et al., 2008). We explored whether the positive effect of improved privacy controls was greatest for ads that used more unique information. Though some celebrities in our test, like Oprah Winfrey, have as many as two million fans on Facebook, some of the celebrities or undergraduate institutions were unusual enough that their potential reach was only in the thousands. We found that personalization was relatively more effective for personalized ads that used unusual information after privacy controls were enhanced. This provides evidence that indeed consumers were concerned that the information being used in the ads was simply too personal to be used in an ad without a corresponding sense of control over their data.


Picture 3. Advertising model system

We confirm this interpretation with evidence from an online survey that tested consumer reactions to different online ads that were associated with either unique or not at all unique private information, in contexts where respondents either felt they had control over their personal information or not. The results from this experiment confirm our earlier findings and, by explicitly measuring stated reactance, provide support for a behavioral mechanism where reactance is reduced for highly personal advertising if consumers perceive they have control over their privacy.

Internet has changed the paradigms of advertising and introduced some concepts which can be considered as a revolution. Before the internet revolution, the advertisers did not have a practical and economical alternative other than the mass advertising. Advertising made by conventional methods (TV's, radios, magazines) were far from targeting a customer range efficiently. Nowadays, by the help of internet, the advertisers are able to reach their target customer more efficiently and with less cost. The most important change of paradigm is personalized advertisement opportunities that internet (World Wide Web) provides. TV, radio, newspapers were not able to publish different advertisements for different users due to physical constraints. However, the virtual environment enables the website owners (i.e. publishers) to display different advertisements to the visitors (i.e. users) from their website. Not only the web site owners, but with the ongoing introduction of newer technologies and fast penetration to the daily life of the population mobile phone

companies are also looking forward for opportunities of personalized advertisement applications.

Internet recognizes the users through collection of data by two means; either provided directly by the users via questionnaires and registration forms or obtained 6 indirectly from the web log of users. Indirect information taken from online activities of users is considered to be more trustworthy and fruitful. Frequency of visiting, time spent in each page, the advertisements user clicks through, pages which user is interested most, location of users obtained from their IP address are all invaluable information. However, this type of information acquisition, referred to as the intrusive methods, is not generally welcomed by public due to privacy concerns.

The systems that are designed with the purpose of advertising the right products to the right user are called Recommendation Systems (RS). In the literature, these systems are classified in three groups, namely the content based systems, the collaborative filtering systems and hybrid approaches. Content based approaches are designed for advertising a product which is similar to the products that user have shown interest before. Collaborative filtering methods utilize preferences, demographics of the user and advertise a product which similar users are interested before. Hybrid approaches stand in the middle of these. For the interested readers we advise to read [5] Targeted or Personalized Advertising Systems' popularity is also increasing and becoming a hot research area. There are some commonalities with its logic and RS's as they both strive to advertise the best advertisements to the users. However, they are different in the sense that, PAS try to satisfy the requirements of the publishers and the advertisers simultaneously. Contracts between the advertisers and the publishers limit the PAS's freedom to always publish the most suitable advertisement for the viewers in order to maximize the overall objective. For example, an RS would prefer an advertisement if the user's possibility to purchase the product is high, hence might yield certain commission to the publisher of the advertisement (the web site owner). However, the PAS should display an advertisement if the corresponding advertiser pays more than the rest. That is to say, the objective function and the constraints imposed due to the contract between the publisher and the advertisers change the structure of the problem drastically and lead to a new mathematical structure.

## 1.3 Personalization process

Personalization constitutes an iterative process that can be defined by the Understand-Deliver-Measure cycle taking place in time and consisting of the following stages shown in Picture 4:

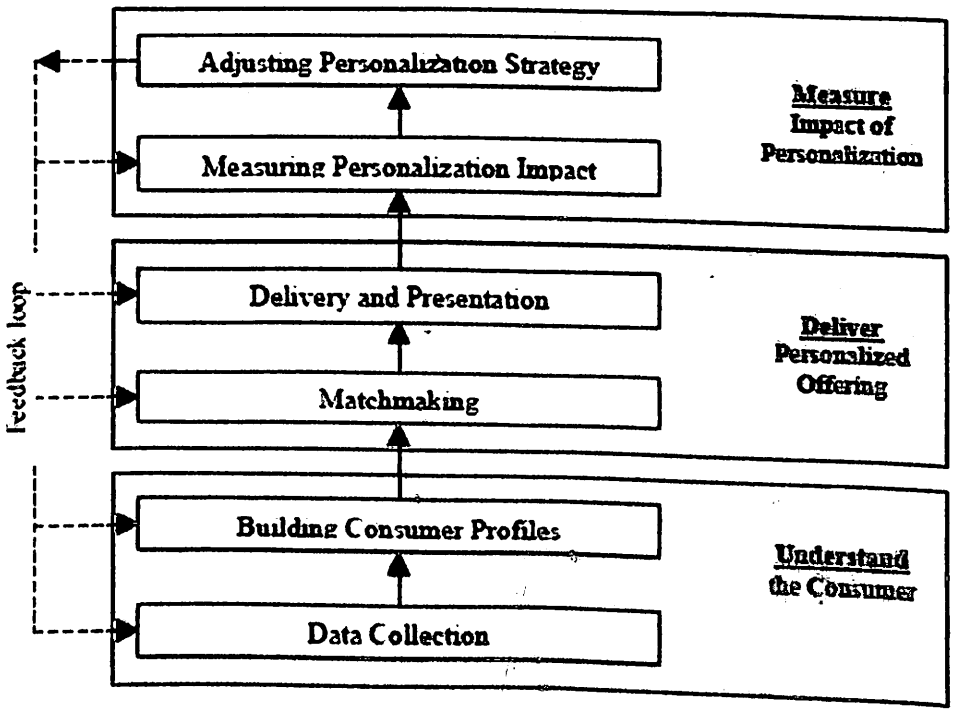
*Understand* consumers by collecting comprehensive information about them andconverting it into actionable knowledge stored in consumer profiles.

*Deliver* personalized offering based on the knowledge about each consumer, as stored in the consumer profiles. The personalization engine must be able to find the most relevant offerings and deliver them to the consumer.

*Measure* personalization impact by determining how much the consumer is satisfied with the delivered personalized offerings. It provides information that can enhance ourunderstanding about consumers or point out the deficiencies of the methods forpersonalized delivery.

Therefore, this additional information serves as a feedback for possible improvements to each of the other components of personalization process. This feedback information completes one cycle of the personalization process, and sets the stage for the next cycle where improved personalization techniques can make better personalization decisions.

The technical implementation of the Understand-Deliver-Measure cycle consists of the six stages presented in Picture.4 and described below.




Picture 4. Personalization process

### 1.3.1 Data collection

The personalization process begins with collecting data across different channels of interaction between consumers and providers (e.g., Web, phone, direct mail, and other channels) and from various other heterogeneous data sources. Such data can be solicited explicitly (e.g., via surveys) or tracked implicitly and may include histories of consumers' purchasing and searching activities, as well as demographic and psychographic information. The objective is to obtain the most comprehensive "picture" of a consumer. After the data is collected, it is usually processed, cleaned, and stored in a consumer-oriented data warehouse.


Picture 5. Data collection shema

### 1.3.2 Match Making

Personalization systems must match appropriate content and services to individual consumers. There are many matchmaking technologies including user-specified rule based content delivery systems, e.g., as deployed by BroadVision [http://www.broadvision.com] and ATG [http://www.atg.com], statistics-based predictive approaches, and recommender systems. However, in this paper we will focus on recommender systems technologies because of the space limitation and because they represent the most developed matchmaking technologies applicable to various types of personalized offerings.

### 1.3.3 Delivery and Presentation

E-companies deliver personalized information to consumers in several ways. One classification of delivery methods is pull, push, and passive .Push methods reach a consumer who is not currently interacting with the system, e.g., by sending an email message. Pull methods notify consumers that personalized information is available but display this information only when the consumer explicitly requests it. Passive delivery displays personalized information as a by-product of other activities of the consumer. For example, while looking at a product on a Web site, a consumer also sees recommendations for related products.

The system can present personalized information in various forms: narrative, a list ordered byrelevance, an unordered list of alternatives, or various types of visualization.

### 1.3.4 Personalization Impact

As was explained before, various accuracy metrics as well as consumer lifetime value, loyalty value, and purchasing and consumption experience can be used to evaluate the effectiveness of personalization. The quality of recommendations, as measured by these metrics, depends on the sophistication of technologies deployed in the previous four stages in picture. 4.

### 1.3.5 Personalization Strategy

As picture 4 shows, measuring personalization impact serves as a feedback for possible improvements to each of the other five steps of the personalization process. This feedback should be used to decide whether to collect additional data, build better user profiles, develop better matchmaking algorithms, improve information delivery and presentation, or to use additional measures of personalization impact. If this feedback is properly integrated in the personalization process, the quality of interactions with individual consumers, as measured by the metrics discussed above, should grow over time resulting in the virtuous cycle of personalization. If the feedback is not properly integrated in the personalization process, then the metrics can decrease over time producing the effect of de-personalization, when the consumer is getting frustrated with the personalization system and stops using it. The depersonalization effect is largely responsible for failures of some of the personalization projects reported in the literature. Therefore, one of the main

challenges of personalization is theability to achieve the virtuous cycle of personalization and not fall into the de-personalization trap. From the algorithmic sophistication perspective, the technologies that contribute the most to this goal are the profiling and the matchmaking technologies.

### 1.3.6 Information Gathering

The Information system designed for an organization must meet the requirements of the end users of the organization. To obtain what an end user expects from the Information System the designer must gain complete knowledge of the organization's working. It is important for the student to know the information gathering techniques so that no information is overlooked and the nature and functions of an organization are clearly understood. The main purpose of gathering information is to determine the information requirements of an organization. Information requirements are often not stated precisely by management. It is the analyst's responsibility to prepare a precise Systems Requirements Specifications (SRS), which is easily understood (SRS) by users, as SRS document is a vital document before starting a project.Information to build an user's profile is gathered from interaction between the user and the PA. Interacting events include [6]:

- *Display of requested web pages.*
- *Search queries entered and answers to surveys.*
- *Videos and music downloaded or played.*
- *Responses to advertisements displayed.*

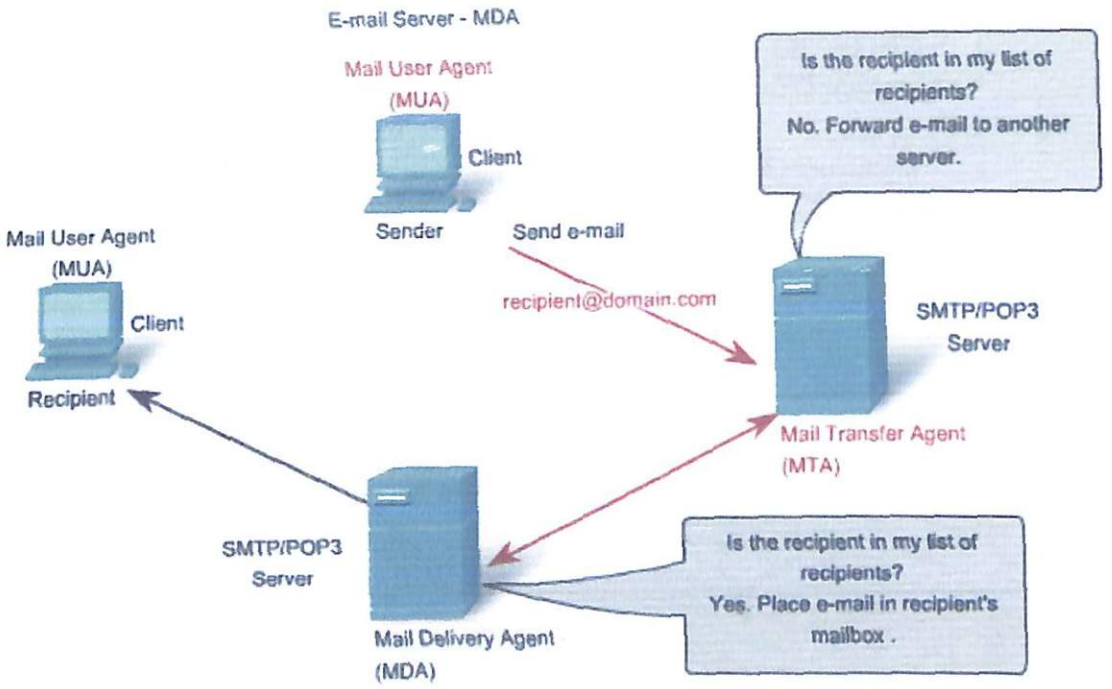
Web ads in network environments from advertising media companies (example: "text ads" from Google's AdSense).

Each time one of these events occurs, there is a relationship established between the user and the PA (and the PA's support server) and with the advertising services that the PAS is cooperating with. Interaction events involve mouse clicking, keyboard typing and screen touching [7]. A record of these actions (including what has been typed or pointed) is kept in log records. This information used then to build the users' profile. Personalization can address individuals or groups of users who share the some identified characteristics or preferences. The following paragraphs present the main information sources for personalization.


Picture6. Information gathering shema

### 1.3.6.1 Electronic mail (E-mail)

The most used Internet application is the electronic mail (e-mail). It is used for sending and reading massages by around 94% of Internet users.Some companies use expert systems for processing information in e-mail messages for marketing purposes (for example www.constantcontact.com). Examples of information that can be obtained this way include: who opens the emails, which do forwards, which links are clicked, who joined a particular campaign, conversion rates, etc. After being processed, this information can be used to update a users profile as well to trigger marketing actions.

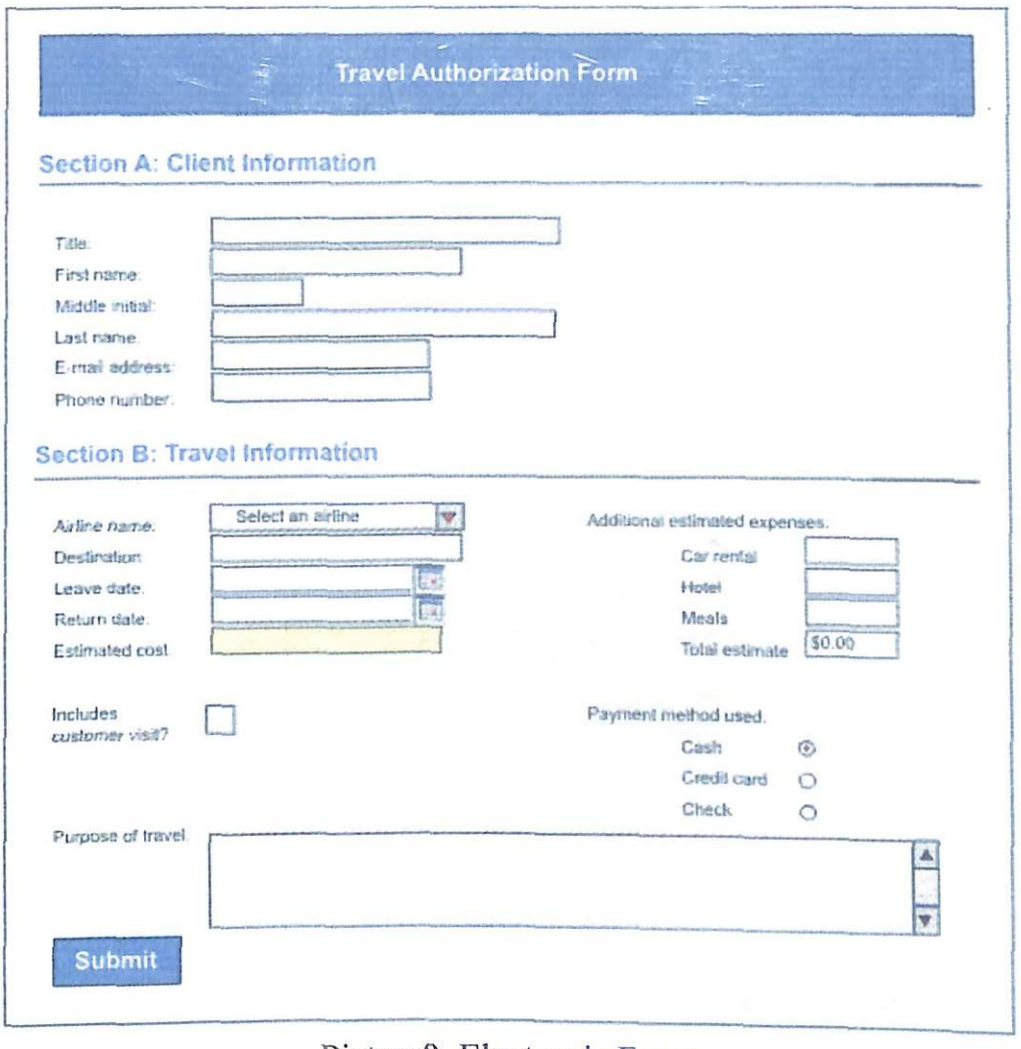



Picture7. The mail delivery between servers and clients

### 1.3.6.2 Electronic Forms

Electronic forms (e-forms) are used by organizations to collect information about a particularindividual or organization with whom a certain relationship isestablished. The information obtained about customers thoughthe electronic forms enable to improve efficiency and servicesassociated with the interaction with users. Improvementsmight address aspects such as reducing wait times, reducingtransaction costs, elimination of support paper, printing, processing, distribution and storage, reduce the negativeimpact environment and can ensure that data are collected in amore accurate and complete with a significant cost savingsand time. Electronic forms can be activated when a userregisters on a site to perform a transaction (electronicspurchases, join a society, etc.), register for a specific event (show, conference, training activity, etc.). The data collectedthrough electronic forms allow determine users' preferences.

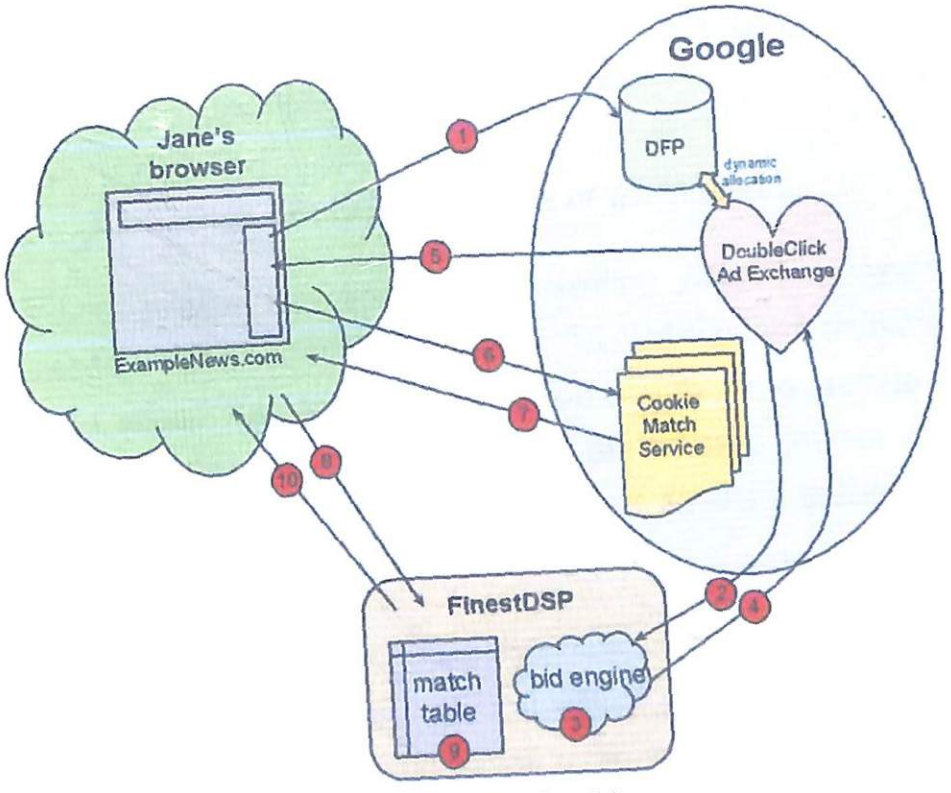
The information obtained is then used to perform targetedmarketing actions.




Picture8. Electronic Form

### 1.3.6.3 Internet cookies

Internet cookies are sets of text that store detailed information about users. Although they do not identify individuals, cookies provide information that combines a computer, a user and a browser .The cookie is usually created, combined and sent by a Web server to theusers' computers when they visit their sites. It contains information about the visitor, detailing what they did when they navigated the site, such as: date of visit, pages visited, page views over time, etc.When visitors return to the site that placed the cookie (using the computer where the cookie is located), the system accesses to the information contained in the cookie, and acts as it remembers the last interaction.




Picture9. Internet Cookies

### 1.3.6.4 Biometrics

So far the best way to recognize in anabsolutely unequivocal one person is through biometrics. It is estimated that by 2020, voice recognition and touchscreeninterfaces will be more prevalent and accepted in the Internet. There are various technologies associated tobiometric authentication. They include control by the eyetracking (iris/retina), facial recognition, fingerprintrecognition, voice recognition, recognition of the lips, therecognition of hand geometry, recognition through a DNAsample. More recent advancements in this area includeinterfaces sensitive to the emotions (Emotionally SensitiveInterfaces - ESI) and recognition by the ears .Thesedifferent types of biometrics can be combined among them (fusion software) to provide more reliable identifications andauthentications . Authentication thought biometrictechnologies, although more invasive, will redefine thepersonalization technologies.

# 2 HIGH SCHOOLS SYSTEM IN KAZAKHSTAN AND JAMECO ADVERTISING MODEL

## 2.1 College Education Systems of the World

In China both regular and vocational secondary schools sought to serve modernization needs. A number of technical and "skilled-worker" training schools reopened after the Cultural Revolution, and an effort was made to provide exposure to vocational subjects in general secondary schools (by offering courses in industry, services, business, and agriculture). By 1985 there were almost 3 million vocational and technical students.

Under the educational reform tenets, polytechnic colleges were to give priority to admitting secondary vocational and technical school graduates and providing on-the-job training for qualified workers. Education reformers continued to press for the conversion of about 50 percent of upper secondary education into vocational education, which traditionally had been weak in the rural areas. Regular senior middle schools were to be converted into vocational middle schools, and vocational training classes were to be established in some senior middle schools. Diversion of students from academic to technical education was intended to alleviate skill shortages and to reduce the competition for university enrollment. Although enrollment in technical schools of various kinds had not yet increased enough to compensate for decreasing enrollments in regular senior middle schools, the proportion of vocational and technical students to total senior-middle-school students increased from about 5 percent in 1978 to almost 36 percent in 1985, although development was uneven. Further, to encourage greater numbers of junior-middle-school graduates to enter technical schools, vocational and technical school graduates were given priority in job assignments, while other job seekers had to take technical tests.

In 1987 there were four kinds of secondary vocational and technical schools: technical schools that offered a four year, post-junior middle course and two- to three-year post-senior middle training in such fields as commerce, legal work, fine arts, and forestry; workers' training schools that accepted students whose senior-middle-school education consisted of two years of training in such trades as carpentry and welding; vocational technical schools that accepted either junior-or senior-

middle-school students for one- to three-year courses in cooking, tailoring, photography, and other services; and agricultural middle schools that offered basic subjects and agricultural science.

These technical schools had several hundred different programs. Their narrow specializations had advantages in that they offered in-depth training, reducing the need for on-the-job training and thereby lowering learning time and costs. Moreover, students were more motivated to study if there were links between training and future jobs. Much of the training could be done at existing enterprises, where staff and equipment was available at little additional cost.

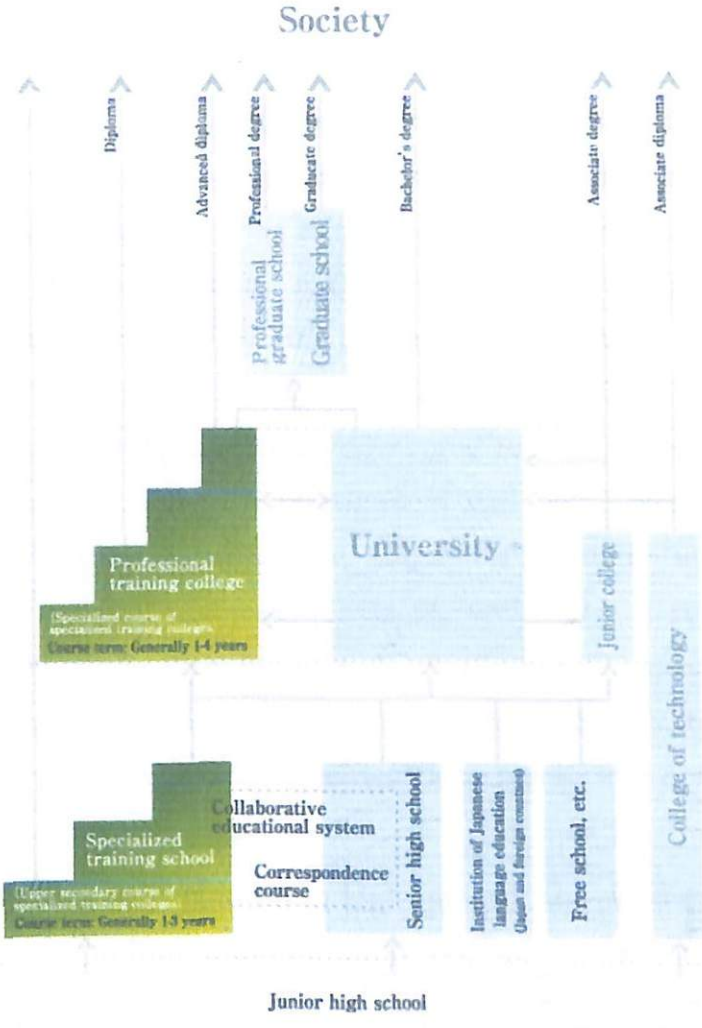
There were some disadvantages to this system, however. Under the Four Modernizations, technically trained generalists were needed more than highly specialized technicians. Also, highly specialized equipment and staff were underused, and there was an overall shortage of specialized facilities to conduct training. In addition, large expenses were incurred in providing the necessary facilities and staff, and the trend in some government technical agencies was toward more general technical and vocational education.

Further, the dropout rate continued to have a negative effect on the labor pool as upper-secondary-school technical students dropped out and as the percentage of lower-secondary-school graduates entering the labor market without job training increased. Occupational rigidity and the geographic immobility of the population, particularly in rural areas, further limited educational choices.

Although there were 668,000 new polytechnic school enrollments in 1985, the Seventh Five-Year Plan called for annual increases of 2 million mid-level skilled workers and 400,000 senior technicians, indicating that enrollment levels were still far from sufficient. To improve the situation, in July 1986 officials from the State Education Commission, State Planning Commission, and Ministry of Labor and Personnel convened a national conference on developing China's technical and vocational education. It was decided that technical and vocational education in rural areas should accommodate local conditions and be conducted on a short-term basis. Where conditions permitted, emphasis would be placed on organizing technical schools and short-term training classes. To alleviate the shortage of teachers, vocational and technical teachers' colleges were to be reformed and other colleges

and universities were to be mobilized for assistance. The State Council decision to improve training for workers who had passed technical examinations (as opposed to unskilled workers) was intended to reinforce the development of vocational and technical schools.

In USA Higher education in the U.S. is also called postsecondary education, but the latter term also refers to all formal education beyond secondary school, whether higher education (defined as degree-granting education) or not. Postsecondary education is broadly divided into two different sectors: postsecondary vocational education and training, which is non-degree but can produce some transferable credits under certain circumstances; and higher education, which includes studies undertaken in degree-granting institutions for academic credit. However, the U.S. higher education system is not legally organized into separate university and non-university sub-systems as are some other national systems, but is comprehensive. It is a diverse and autonomous community of publicly and privalely supported institutions. Current data indicate that there are 6,479 postsecondary institutions, including 4,182 non-degree institutions. Of the degree-granting higher education institutions, some 1,732 award only the associate degree plus sub-bachelor's certificates and diplomas; 702 award only the bachelor's degree; 1,094 award degrees and certificates beyond the bachelor's degree but not the research doctorate; and 654 institutions award the research doctorate.




Picture10. The USA education systems.

The United States does not use an official classification or typology for its higher education institutions. While different institutions offer varying levels of degrees, U.S. accreditation policies result in degrees at any given level adhering to certain minimum standards regardless of the institution that grants them. The privately derived but popular Carnegie Classification organizes U.S. institutions according to different schemes. The U.S. higher education system is characterized by accessibility, diversity, and autonomy and is known for both its size and quality. The federal government has no jurisdiction or authority over the recognition of educational institutions, members of the academic professions, programmes or curricula, or degrees or other qualifications. Nearly all U.S. postsecondary institutions are licensed, or chartered, by a state or municipal government to operate under the ownership of either a government (if public) or a private corporation (if independent), and may be for-profit or not-for-profit enterprises. Religious institutions are considered independent, or private. Quality assurance is achieved via

the system of voluntary accreditation by specific accrediting agencies that are recognized by the U.S. Secretary of Education and meet the standards for membership in the Council for Higher Education Accreditation (CHEA). Accreditation is a self-regulating process of quality control engaged in by the U.S. postsecondary education community to ensure minimum standards of academic capability, administrative competence, and to promote mutual recognition of qualifications within the system. Six (6) regional accreditation associations set minimum standards for institutions chartered in the states of their respective jurisdictions. In addition, there are recognized accrediting agencies for specialized institutions and programmes. While all recognized and accredited institutions are licensed or chartered by state governments, states vary greatly in the degree of supervision and quality control that they exercise, and there is relatively limited reciprocity of recognition across state borders. Accreditation by recognized agencies, therefore, remains the primary means of ensuring academic and institutional quality and the mutual acceptance of credits and qualifications across and outside the United States.

Russia has a long-standing tradition in high-quality education for all citizens. It probably has also one of the best mass-eduction systems in the world producing a literacy rate (98%) exceeding most Western European countries. Education is split into a compulsory Basic Education, and ongoing Higher Education.

Basic general education lasts for nine years. Graduates of this level may continue their education at senior high school to receive secondary general education. They may also enter an initial vocational school or non-university level higher education institutions. Initial vocational schools include PTU(Professional'no-technicheskoe uchilische) which offer one-and-a-half to two years' purely professional education and a Professional'ny Litsei which offer joint professional and secondary general education for three to four years and skilled workers' training at different levels. Non-university level higher education institutions also offer three- to four-year professional and secondary general education and two-year vocational training for holders of the School Leaving Certificate. Secondary general education on the basis of basic general education continues for two years and ends when students are 17-18. Graduates from a secondary general school may apply for entrance to a higher education institution. Secondary education leads to the award of the Attestat o Srednem (Polnom) Obshchem Obrasovanii (Certificate of Secondary Complete General Education).

Higher education is provided by public and non-public (non-State) accredited higher education institutions. There are two levels of higher education:

- Basic higher education (4 years) leading to the Bakalavr's degree, the first university level degree. This is equivalent to the B.Sc. degree in the US or Western Europe
- Postgraduate higher education (5-6 years or more). After two years, students are entitled to receive a Magistr's degree. This is equivalent to a Master's Degree (M.Sc, M.A.) in the US or Western Europe. After a Master's degree, students can continue to study towards a doctoral degree: Kandidat Nauk degree (the first level, equivalent to Ph.D.) and Doktor Nauk degree (the second, highest level, equivalent to Professor).

The Bakalavr's (Bachelor's) degree programmes last for at least 4 years of full-time university-level study. The programmes are elaborated in accordance with the State Educational Standards which regulate almost 80% of their content. The other 20% are elaborated by the university itself. The programmes include professional and special courses in Science, the Humanities and Social-economic disciplines, professional training, completion of a research paper/project and passing State final exams. Having obtained the Bakalavr's degree, students may apply to enter the Magistr's programme or continue their studies in the framework of the Specialist's Diploma programmes. The Bakalavr's degree is awarded in all fields except Medicine after defending a Diploma project prepared under the guidance of a supervisor and passing the final exams. In Medicine, the first stage lasts for six years.

Holders of the Bakalavr's (Bachelor) degree are admitted to enter the Specialist Diploma and Magistr's (Master's) degree programmes. Access to these programmes is competitive. The Magistr's (Master's) degree is awarded after successful completion of two years' full-time study. Students must carry out a year of research including practice and prepare and defend a thesis which constitutes an original contribution and sit for final examinations.

Access to the Kandidat Nauk (Aspirantura) level again is very competitive. Candidates must hold a Specialist Diploma or a Magistr's degree. Studies last for 3 years. The Aspirantura prepares for research and professorial activities. Students must learn teaching methods, ICTs, and pass qualifying (Kandidat Nauk) exams. They carry out independent research, prepare and defend a dissertation in public. They are then awarded the scientific degree of Kandidat Nauk. The Doctor Nauk programme is specific and its duration is not fixed. It follows the Kandidat Nauk and is awarded after preparation and public defence of a dissertatio

The major law providing a general framework for the development of Higher Education in Kazakhstan is the Law "On Education" (1999, 2007). In July 2004 a Law "On introducing amendments and changes to the Law "On Education" of the Republic of Kazakhstan" was adopted. It marked an important step in strengthening and improving the legislative and normative provisions of higher and posthigher education. It considerably tightened qualification requirements for the operation of higher education institutions and affiliated branches. New standards were introduced for full-time staff members.

The operation of affiliated branches was restricted to social sciences, humanities and scientific disciplines only. Concerning the background to these branches, in the 1990s when it was setting up private educational institutions was permitted and when the legislative base had not yet been stabilised many new educational institutions emerged, in particular, for higher education. Among them

there were many affiliated branches of HEIs officially registered and physically located in other countries. The content of education was not consistent with Kazakhstani legislation and normative documents. It was difficult to control the quality of services provided. To strengthen the quality of training and to control the teaching and learning process it was decided to restrict the foundation of affiliated branches.

The requirements related to the material and technical base of HEIs and the availability of own facilities were increased. To enhance the quality of education and strengthen state control in the system of education, the Unified

National Test (UNT) and Interim State Control (ISC) were introduced. The ISC is a national exam conducted by the National Centre of State Educational Standards and Testing and involves second year students of all subjects except medicine (for medicine, the ISC is conducted during the 3rd year of study).

The State Education Development Programme for 2005-2010, adopted in 2004, laid the basis for introducing from 2005 the three-cycle system of higher and post-higher education ("Bachelor-Master-PhD") and a credit accumulation system. The new Law "On Education" was adopted on 27 July 2007 and takes into onsideration international standards in the field of education in view of Kazakhstan joining the World Trade Organisation and integration with the Bologna process.

Types of tertiary education programmes and qualifications Higher education can be obtained by citizens who have completed general secondary, technical and vocational education or further education. On a competitive basis, citizens have the right to free higher education.

In accordance with the Law of the RK "On Education" (2007) the following levels and qualifications have been established:

1) Higher basic education – Bachelor programme (Bakalavriat) - with a duration

of study of 4 years;

2) Post-higher education includes Master programmes (magistratura) in two areas: scientific-pedagogic education with duration of two years of studies, and profilewith duration of one year of studies. Both areas are built on the basic higher education, i.e. Bachelor studies.

3) Doctoral studies comprising preparing Doctors of Philosophy (PhD) and octors in selected profiles (Doktorantura) upon completion of Master programmes. The duration of study is a minimum of 3 years.

Post-higher medical and pharmaceutical education includes resident, Master and doctoral studies. Resident programmes include in-depth training in clinical pecialties with a duration of 2 to 4 years of study depending on the specialisation. In selected specialties of medical studies the duration of study comprises seven years, and the final year of study is organised in the form of internships.

Post-higher education as the senior level (cycle) of continuing education is aimed at preparing highly qualified scientific and pedagogic staff. It is organised through clinical, post-graduate, and stagiaire studies, and through post-graduate work at a ilitary academy, doctoral studies, granting research leaves, and so on.

Types of tertiary education institutions The higher education institutions (HEIs)

functioning in Kazakhstan are universities, academies or institutes. Conservatories, higher 3schools and higher colleges have a similar status. The type of higher education institution is determined at the stage of licensing and depends on the number of higher and post-higher education programmes and orientation of research work. The type is reasserted during state attestation and accreditation. An Institute (Institut) is an institution that implements professional educational programmes of higher education in one or two groups of specialties, carries out research and pedagogic activities, up-grading of qualifications and retraining of staff; An Academy (Akademia) is an educational institution implementing ducational programmes of higher and post-higher education in one or two groups of specialties, carries out research and pedagogic activities, up-grading of qualifications and retraining of staff; A University (Universitet) is an educational

institution implementing professional educational programmes of higher and osthigher education in three and more groups of specialities (medical universities – in two and more), carries out research and pedagogic activities, upgrading qualifications and retraining of staff, and is a leading scientific and methodological centre in a specific area of activity; The number of HEIs has grown dramatically since 1993 when the government legislated to allow the setting up of non-state (private) universities. At present there are 144 higher education institutions (55 State HEIs and 89 private). The number of non-state (private) institutions was gradually increasing until 2001 and started to decline in 2002. In line with the Law "On Education" (1999), selected state higher education institutions were granted the special status of "national universities". This status is awarded to 9 HEIs who are considered to be most capable of leading the system in cutting-edge research (fundamental, applied or entrepreneurial) and in improving teaching and learning.

## 2.2 Higher Schools (Colleges) System in Kazakhstan

The adult literacy rate in Kazakhstan is 99.5%, one of the highest in the world. Primary and secondary education in Kazakhstan is universal and mandatory, and higher education is highly valued by its citizens. Education in Kazakhstan is comprised of three consecutive levels: primary education (forms 1-4), basic/general education (forms 5-9) and senior level education (forms 10-12), which can be either professional education or continued general education. All primary and secondary education can be completed in one institution or in various institutions. Senior level professional education is provided by specialized professional/technical schools, vocational schools, colleges and lyceums.

Secondary professional education includes the organizations of secondary professional education (colleges, schools) on the basis of the main general, secondary general and primary professional education on a competitive basis and is directed on training of specialists with secondary professional education.

The citizens having the secondary general education, primary professional education on related specialties, can get a secondary professional education according to the reduced, accelerated programs.

In the organizations of secondary professional education, training is carried out in internal, correspondence, evening, remote forms of education, and also the external studies.

The reception order in the organization of secondary professional education is established according to Standard rules of reception on training in the organizations of education realizing professional training programs of technical and professional education, approved by the order of the Minister of Education and Science of the Republic of Kazakhstan of November 29, 2007 No. 587.[8]

Professional practice by profession is carried out in the profile organizations (the enterprises, establishments).

### 2.3. Zhambyl Kazakh Turkish College of Economics

The current century is an era when science and education are impossible to exist without innovative technologies. This era is time of high demands to all educational establishments that are bringing up new generation. Hence, our college with the history of two decades has such tasks as:

- Constant development while improving teaching process
- Management and introduction of new technologies to teaching process
- bringing up patriots of motherland and training highly demanded specialists on contemporary market of labor

Zhambyl Kazakh-Turkish College of economics is now getting ready to celebrate its 20 years anniversary. As the college is unique in Kazakhstan, there are many students studying from different parts of the country. The college is functioning under aegis of International KATEV fund, which serves as golden bridge of friendship and harmony between two countries and make its own contribution to development of culture and education.

Within 20 years college has gained reputation of educational establishment firmly standing on its feet. It has become famous for its teaching methodology, dignified graduates and achievements; all of these are associated with the college which has got its own traditions, and justifiably proud of it, there are plans for future and team of like-minded workers for implementations the ideas. Under its belt college has rich history full of happiness, sadness, hardships and memorable events. Due to its individual peculiarities it differs among other educational establishments. Year after year college gets improved and become more and more beautiful.

Jambyl Kazakh-Turkish College of economics was founded in 1993. The college provides students with modern and professional-technical education in accordance with the approved program of the Ministry of education and science of the Republic of Kazakhstan.

At present college has staff 33 teachers, 52% of whom teachers of higher and first categories, 2 master degree holders and 1 Outstanding Teacher of Honorary Distinction of RK

College offers following programs of economics profile:

0513000-marketing

0515000-management

0518000-accounting and audit

294 students are studying according to programs mentioned above, 254 of them have got grants funded by regional budget, and 40 students are paid.

Each year college renews and equips its physical infrastructure. The complex consists of hostel for 300 persons with furnished rooms, Assembly Hall with 200 seats, and large dining room.

College has wi-fi connection, two classes equipped with computers. Classrooms are supplied with multimedia technologies. Seven classrooms have interactive boards and OHP. Each of educational programs is provided with computer assisted instruction.

Methodic department, Education and Methodic Association, IT room, library, sport and fitness complexes, gym class and other infrastructure are involved in supplying teaching process and research works. Kazakh and English are languages of instruction, whereas Russian and Turkish are taught as special subjects. Science subjects (mathematics, chemistry, physics, IT), special subjects are taught in English. Students have good chance to improve their language skills of English and Turkish during first year of education. College creates all conditions for preparing to international exams of English as IELTS and TOEFL. Graduation groups are mandatory to pass NOK – independent evaluation of qualification arranged by RSE (Republican State Enterprise) «Republican research-methodological center of

technical and professional education development and certification» for acknowledgement of professional qualifications, after the exam students receive along with diploma certificate of qualification and standard certificates which proves the knowledge of English and Turkish languages.

- involvement of all teachers in innovative process
- organization of teaching process
- introduction of schedule of demo/open lessons

College has prepared creative scientific-methodological documents as «Introduction of innovative technologies in teaching process», «Scenarios of demonstration lessons and innovative seminar-trainings». At present time college conducts media-teaching.

Library of Jambyl Kazakh-Turkish College of economics provides educational process and research works with documentation and information, it is center of knowledge, spiritual and intellectual communication and culture. There are 18287 books in fund of library, 12708 textbooks, 5579 fiction books, 935 electronic textbooks, 436 guidance manuals. In average within one year 13249 readers visit library, book issuance 19788 books per year. Book acquisition is implemented in accordance with the Law about State Purchases by means of price offers and with the involvement of KATEV fund. Library has acquired 4380 textbooks for special subjects and English language from Universities of Cambridge and Boston; English textbooks from Turkey for mathematics, IT, biology, chemistry, English language from printing house «Zambak» and from Columbian University printing house «PEARSON». Number of textbooks in Turkish – 850, fiction books 1986. The library is equipped with computers with the access to internet. The library has e-catalog, educational and scientific literature is stored on CD (CD-ROM, W/CD/) for marketing, management, accounting and audit.

Along with global trends of new technologies Development College conducts work on computerization of educational, research and management processes. College has created units providing development and introduction of new information technologies in educational process of teaching which forms informational culture of students, informational exchange on the basis of integrated to domestic and international system of joint information and communication network, that provides

population with information services. Computer technologies are widely on all stages of educational process due to integrated computer network. Strategic element of college's network is information and communication server which:

- serves as base for expansion of information system of college, posting and filing system, teleconferences
- enables to organize integration to Kazakhstani and foreign global networks

The main aim of Kazakh-Turkish College of economics is to bring up highly educated, creative, initiative and talented youth with the leadership character appropriate to current generation who speaks state, foreign and Russian languages. This generation will work for prosperity of the Republic of Kazakhstan. At present through its achievements college displays excellent results in different competitions of republican and international levels. Within the walls of college there are number clubs attending which helps students to reveal their capabilities, enrich horizon, for example: «Club of economics», «Art and fun», «Club of IT», «Kazakh language», « Dolche Vita», «Sports club».

1. Club of economics consists of following subgroups: Teaching department, Consulting department, Human Recourses department, Press department and Debate department. Students of «Press department» once a week issue magazine «Jameco press», the magazine is about college life, achievements and news from internet of informative and entertaining character. The magazine of 25 copies edition is fully sustainable.
2. Sports club includes: football, volleyball, chess, tennis, togyz kumalak, arm-wrestling. Art and fun club includes sections of guitar, dombyra, dance, and signing, comedy.
3. «Dolche Vita» club helps girls to practice bakery, knitting, arts of origami, cinema criticism.
4. During holidays and vacations students with their tutors visit historical places, go camping.
5. Appealing to sources of culture, dialogue with wildlife spiritually enriches and contributes to upbringing of youth.

Events like festivals, concerts, competitions, comedy clubs, and performances are held regularly. Our students also take part in concerts and performances of city and regional scale: Dostyk Square parades on 1 and 9 May, City Day central stadium, and take active part in scientific and practical conferences on city, regional and republican levels. Students of our college Sagadat Berkinbai, Amirtai Dariya received first places in debates, theme: Youth is future of Kazakhstan organized by NurOtan and Zhas Otan parties. In Russian league Nurzhan Kulshebayev and Dyias Shauharov received first places. Kseniya Kryakvina took the first place in regional linguistic competition «Тіл – халық жанын танудың кілті» (language is the key of country study), and second place on republican level, received an award in amount of 150 000 KZT. The winner of the same competition in 2012 is also our student Alua Essenbayeva. Aisulu Malgazhina took the fist place in III regional scientific and practical conference organized by NurOtan party, theme: XXI century time of technical and judicial development, Yelena Khassenova took first place, the theme: Issues in pedagogy and psychology, politics and culture. In 2010, on 23-26 April, third year students Assel Tukayeva and Tolkinay Kartbayeva participated in international Informatics Olympiad 2010, received gold medal for production of slide film about Friendship. Aigerim Khalykova was awarded certificate for ability of high order in international competition among juniors in aikido «European youth model for active citizenship», held in Sofiya, Bulgaria. Agaisha Zhilkaidarova in 2010 took part in international Turkish language Olympiad in Ankara, Turkey, and among 115 participants got the third place. On 15-25 June 2011, in the same competition took part Kalila Malika Budur, and out of 131 participants took fourth place. In 2012 in the same competition students of the second year Samat Tursunaliyev and Yernar Kudaibergenov got 2 and 3 places accordingly. Winners of 2013 International Turkish language Olympiad are students Aldiyar Sarsenbayev and Raikhan Nurman will take part in international competition in Ankara, Turkey. In 2012 Zhanar Bolekbai 3 year student became the winner in nomination Best Judge, in regional competition Best Debate Club. Champions of debates between colleges and Universities our students: Dariya Amirtai 1D1 group, Sagadat Berkimbai 2D, Islam Tursynbek 2D, Manasbek Tleuov 2D. Winners of 2012 regional project in scientific practical conferences in economics: nomination Innovator- Aidana Makulbek 3D2, second place: Rauan Zhanabek, Assel Nakypbekova both are students of group 3D2. In September 2011 our college became winner in nomination the Best College in regional competition among colleges, and first place in research project work among

colleges, and the second place for the best Business plan. In 2005-2006 teacher of IT, Remzi Demirdjan took part in regional teachers competition organized by department of education of Jambyl town council and received Grand prize Gold Disk. In 2007-2008 our college took third place in competition the Best methodological works organized by education department of Zhambyl regional town council. In 2009-2010 methodist of our college Rashida Tubayeva took the second place in regional competition as the Best Methodist, organized by Zhambyl regional town council. In 2009-2010 our college took second place in regional competition We build Kazakhstan together, organized by party NurOtan

According to the results of competition organized by NurOtan branch in Jambyl region and Zhas-Otan in 2012 our college became winner in following nominations: Best Debate School and Best Debate Club.

College is aimed to come up to expectations, teach and develop in students personal qualities such as: justice, kindness, love, respect to others, loyalty, to accomplish duties and tasks with pure intentions, to avoid lies, pay attention to family and family values, be involved in volunteering, to stay away from negative things and being modest. Students understand that they shouldn't be arrogant, egoist, snob, speak behind someone's back, accuse others. Being constantly in touch with parents is one of the main means of college's educational process. The process is accomplished due to close interaction of parents and teachers. Students' parents take active part in college's social life; they are involved in various sports events and celebrations. Within the frame of cooperation parents and teacher often organize joint trips to cities of Kazakhstan and Turkey. During the trip they visit cities, become acknowledged with the work and activity of international fund KATEV. Class teachers and tutors regularly visit the house of students. Teachers and parents trust and rely on each other, as they pursuit one aim to bring up healthy and wise youth. In accordance with the complex testing results, Jambyl Kazakh-Turkish College of economics took the 5$^{th}$ place all over the Republic as the educational establishment that received high scores. In 2011-2013 82 graduates graduated from college, 19 of them are employed, 61 entered universities, and 2 students are continuing their education abroad in Malaysia and Turkey.

College is proud of its graduates, here the short list of some of them:

**Galymzhan Kyrbasov** – Doctor of political sciences, USA

**Yerbolat Sadyrbayev** – counselor at RK President's apparatus

**Nurzhan Zhambekov** – specialist of commercial bank, Toronto, Canada

**Bayirzhan Oryngaliyev** – deputy of Mayor of Atyrau city

**Alim Bayaliyev** – works in the ministry of international relations in Ankara, Turkey

### 2.3.2 Project Marketing and Management

There are two main ideas with Project Management and Marketing Club. First, promote Kazakh Turkish College of Economics. Second, involve students to real world.

Abbreviation of PMM says that, it will be related with Project Management and Marketing. As in other countries this branches of economy getting more popular in Kazakhstan. Currently, Jameco cannot provide separate program/courses for these professions. To solve this problem, management of College decided to teach disciplines with application via student club.

As we mentioned before, in the era of social media and internet, we have to act, may be completely different than early time schedule. Promote our college through traditional methods like TV and publishing advertisements is getting less effective. Teenagers mostly do not watch TV much and of course most of them also do not regularly read newspapers. These issues force us search different ways to contact with our potential students. After the several meetings and brainstorming we decided to create a club, where our students will present college in internet generally, in social media especially. Main reason of our choosing students was that, students will be speaking in same language as college enrollees.

Other side of this project is that we also want to make opportunities to develope students in their professional fields. There are several types of students, one of them want just attempt the classes and pass them but there are also others who are really willing to get real professionals in their subject. Normal course with standard program, with lectures, books, presentations, cannot provide these opportunities. Management and marketing are changing fastly, so courses cannot adjust programs in times. In Project management and marketing club, students can read special blogs, monitoring trends and most important, they can apply their knowledge.

PMM is involved with promotion of college, organizing events in and out of Jameco; arrange internship for college students, activities with alumni's. Managing these events need from members of club real knowledge of techniques how to manage projects and making marketing activities.

### 2.3.2.1 Details of PMM

«Project Marketing Management» Club started it's activity **on 20 march 2013** year. Club's aim is attraction more applicants to Jambyl Kazakh Turkish College of Economics.

This club has 3 departments:

1. Organization department
2. Marketing department
3. Technology and support department

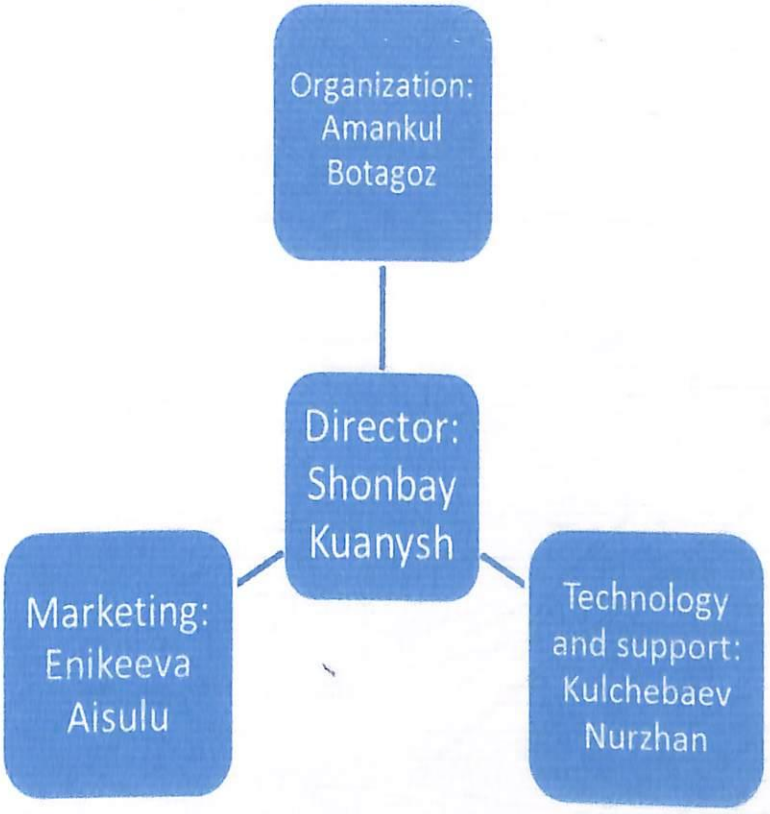



Table1. Departments and responsible students

### 2.3.2.2 PMM Departments

Marketing is the process of communicating the value of a product or service to customers, for the purpose of selling the product or service. It is a critical business function for attracting customers.

This department of PMM club works with finding new and creative ways to attract more applicants. So responsible for this department should be the creative worker. Also he need to work well with the Internet to find interesting ideas which

will be used in advertisement of college. Into work of responsible for marketing department enters a lot of prophetics:

1. Finding new and interesting ideas which will be useful to advertisement;
2. Searching for the information which is used for advertisement;
3. Preparation of statistics for right way of club;
4. Giving the information on a telephone to applicants and interested persons;

From the moment of opening club the department of marketing has performed a lot of work:

1. Prepared statistics of schools that most interested in our college, for granting attitudes from college. The statistics for 5 years among all schools of Zhambyl area has been taken and 3 groups has done: A group – most interested schools, B group – less interested schools and C group- regional schools. In time of making advertisement for each group has made advertisement that suits them.

| A group | B group | C group |
|---|---|---|
| #5 (90) | #40 (28) | Байзақ ауданы (120) |
| #45 (63) | #1 (27) | Жуалы ауданы (97) |
| #8 (54) | #2 (24) | Жамбыл ауданы (97) |
| #48 (40) | #26 (25) | Талас ауданы (62) |
| #7 (36) | #39 (23) | Шу ауданы (49) |
| #12 (36) | #32 (21) | Тұрар Рысқұлов (45) |
| #41 (32) | #42 (19) | Мерке ауданы (44) |
| #53 (32) | #47 (19) | Кордай ауданы (29) |
| #49 (30) | #30 (18) | Сарысу ауданы (23) |
| #13 (29) | #31 (18) | Мойынқұм ауданы (12) |

Table2. ABC groups of schools

2. For advertisment of the college in schools was prepared special information for scheduling the presentation, which attract much more applicants. This presentation had new and creative ideas for drawing attention of pupils. Every slayd was not very difficult to understand so potential applicants could find all information about college. For example, in one slide "Do you want to understand Turkish soap operas in their native language?" was written. We can see that this theme is very familiar to pupils and they are interested in it, because most of them watch it on TV every day. There is no one pupils who don't know these films.

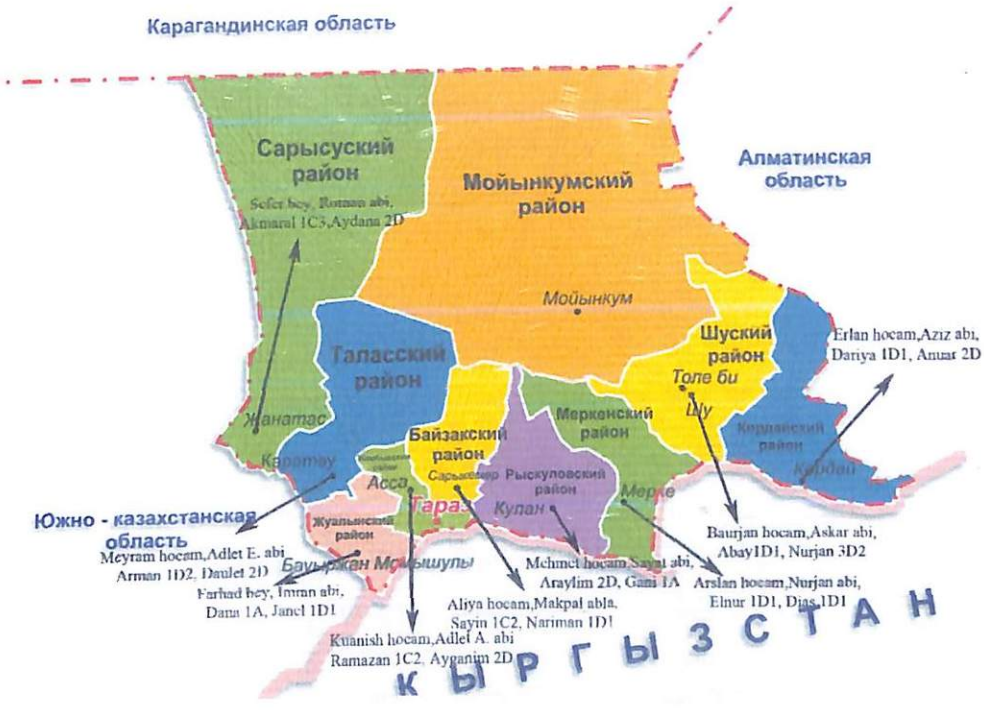

Picture11. Presentation about Turkish language

Also we gave all the information about college.


Picture12. Shot from presentation

3. The map of responsible teachers and students for trips to regional schools has been prepared. There 10 regions in Zhambyl area. But our kazah-turkish college made advertisement only to 9 regions because of ineffective advertising to one of them. We didn't send anyone to Moyinkum region. The ineffectiveness comes from statistics ABC groups of schools we prepared before. By the information in 5 years 5 applicants handed over documents in our college. So it is very ineffective to provide the advertisement over this region.

   In other places were sent one responsible teacher, one tutor and two students. One of these students should know all about the center of region them go.It means he should be native inhabitant of this region. So it makes their work easier and cheaper. But it is not only reason of such work. Also in time of presentation everyone tells about college. The native inhabitant who is our student tells how he could enter the college and if it was hard to study far from home. All if this makes pupil fell very comfortable and they can adopt us as their own.




Picture13. Map of Jambyl regional duty allocations

The map of trips to Taraz's schools has been made. The distance between schools has been measured and relatives on distance are chosen most. Schools were united on three and 19 groups are made.

| № | Мектеп | Жауапты |
|---|---|---|
| 1 | № 1/3/10 | Нұрманова Мөлдір |
| 2 | 6/14/22 | Прназаров Бауыржан |
| 3 | 50/Дарын/44 | Аббасов Арслан |
| 4 | 45077 | Бейсембаева Жанар |
| 5 | 41001 | Шагирова Жұлдыз |
| 6 | 9/26/54 | Нұржігітова Алия |
| 7 | 37/1/32 | Елубаева Алтынкул |
| 8 | 7/53/42 | Иманов Ерлан |
| 9 | 35/25/38 | Алиева Ғазиза |
| 10 | 34/14/27 | Отарбек Саят |
| 11 | 21/29/17 | Зенгин Сефер |
| 12 | 16/24/11 | Бозабалы Мехмет |
| 13 | 15/19/57 | Хакимов Фархад |
| 14 | 12279 | Мухамадиев Мейрам |
| 15 | 30/40/20 | Қадырбаева Макпал |
| 16 | 36/45/39 | Мамедов Имран |
| 17 | 28/43/48 | Прназаров Бауыржан |
| 18 | 41/47/49 | Искаков Азиз |
| 19 | 46/51/52 | Иманов Нұралы |

Table3. List of responsible teachers for Taraz city's school

For each group have been chosen responsible teachers and pupils.

| | Аудан атауы | Жауапты мұғалім | Жауапты оқушылар |
|---|---|---|---|
| 1 | Бурный | Хакимов Фархад | Кентай Акерке |
| 2 | Сарыкемер | Нуржигитова Алия | Доскумбаев Сайын |
| 3 | Аса | Шоңбай Қуаныш | Әміре Айдана |
| 4 | Каратау | Мухамадиев Мейрам | Жарасбек Ғабдулла |
| 5 | Жанатас | Зенгин Сефер | Еникеева Айсулу |
| 6 | Шу | Прнзаров Бауыржан | Кудайбергенов Ернар |
| 7 | Луговой | Бозабалы Мехмет | Оспанов Максат |
| 8 | Меркі | Аббасов Арслан | Амиртай дария |
| 9 | Кордай | Иманов Ерлан | Болат Акерке |

Table4. List of responsible teachers and students for regional schools

4. The questionnaires were collected from all pupils of 9 classes. This work done to have link between college and pupils. They may were interested at our college at the time of advertisement but then most of them could forget it because of stress after exams and etc. So by these questionnaires we could have link by telephone and internet.

Аты-жөні_____

Мектебі_____

Телефон_____

Email_____

Table5. Type of questionnaires

5. The questionnaires collected from schools have been reprinted in an electronic kind

| Аудан: Сарыкемер/Мектеп:Сарыкемер | | | |
|---|---|---|---|
| N | Аты-жөні | ұялы телефон | email |
| 1 | Акжолтаев Ерұлан | 87711592809 | erlan.akzholtaev.97@mail.ru |
| 2 | Сеитова Зауре | 87770855686 | zaure_seitova@mail.ru |
| 3 | Үйсінбай Мөлдір | 87770935896 | modi.20.07.97@list.ru |
| 4 | Рахметділдә Назерке | 87056701665 | rahmetdilda@bk.ru |
| 5 | Абдирасимов Алмат | 87770921915 | alik_taraz@list.ru |
| 6 | Серік Дарын | 87074986070 | daryn_pul@mail.ru |
| 7 | Аманбек Жанат | 87786890151 | number-one.girl@mail.ru |
| 8 | Муратова Мағира | 87711582697 | magira.9797@list.ru |
| 9 | Снадинова Жансая | 87055417429 | jankaaa_97@bk.ru |
| 10 | Құттымұратова Айша | 87058456667 | aisha_1505@mail.ru |
| 11 | Нурумбетова Айгерім | 87789555894 | aikosha-1997@list.ru |
| 12 | Куатова Арай | 87715895479 | Araika_97_97_97@bk.ru |
| 13 | Тургалиев Т.С. | 87057979028 | romantik_timok@mail.ru/lucky_timok@mail.ru |
| 14 | Кудабаева Мереке | 87774674341 | mereke_97_18@mail.ru |
| 15 | Тұрғанбаева Мадина | 87771025821 | madinochka96@bk.ru |

Table6. Collected questionnaires in electronic version

7. Messages have been sent to entrants and some calls to each school for granting the information about "Open doors day" are made. ("Open doors day" has been hold first time at college)

8. Now gives the information to entrants and all interested persons on a cellular telephone

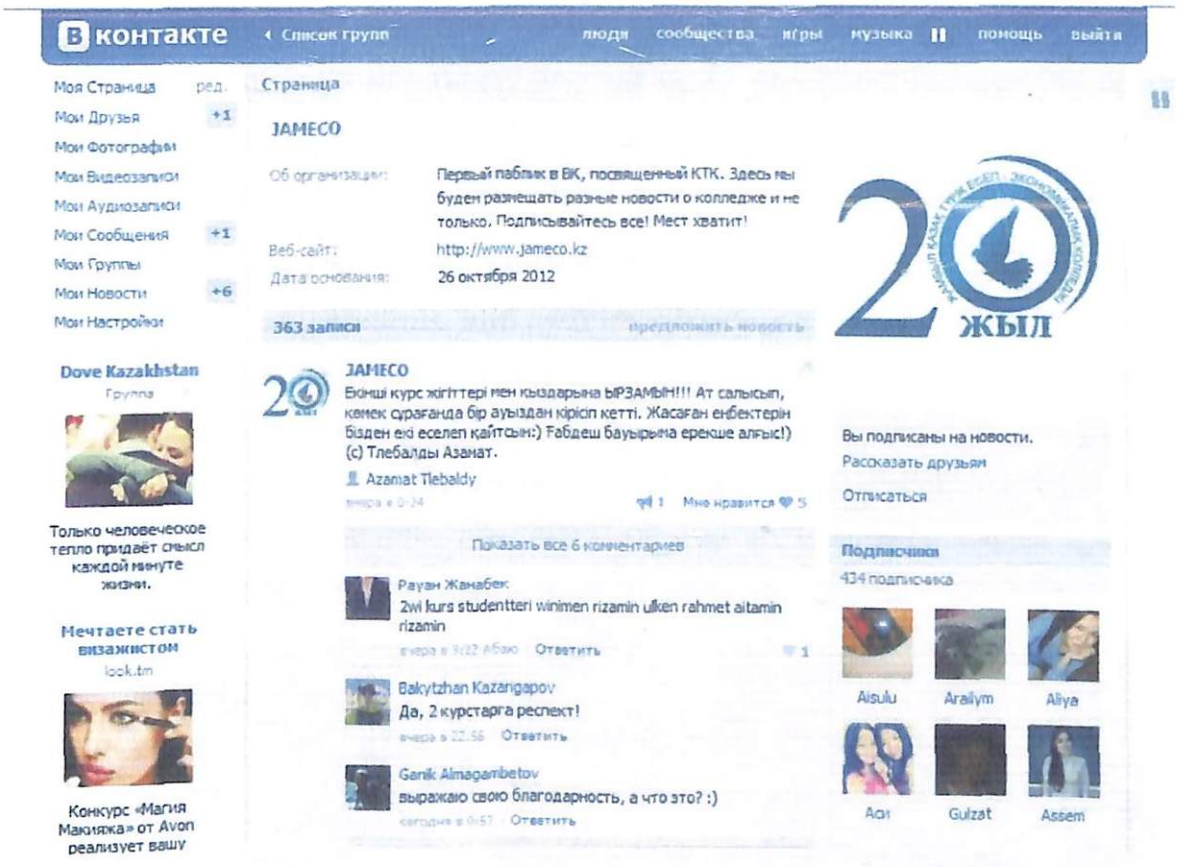
**Technology and support department**

The mission of technology and support department is to provide technical assistance to support, enrich and empower the college's community, assisting it to achieve excellence in instruction, research, clinical care, operations and reputation. Mainstream of technology and support department is establishment of

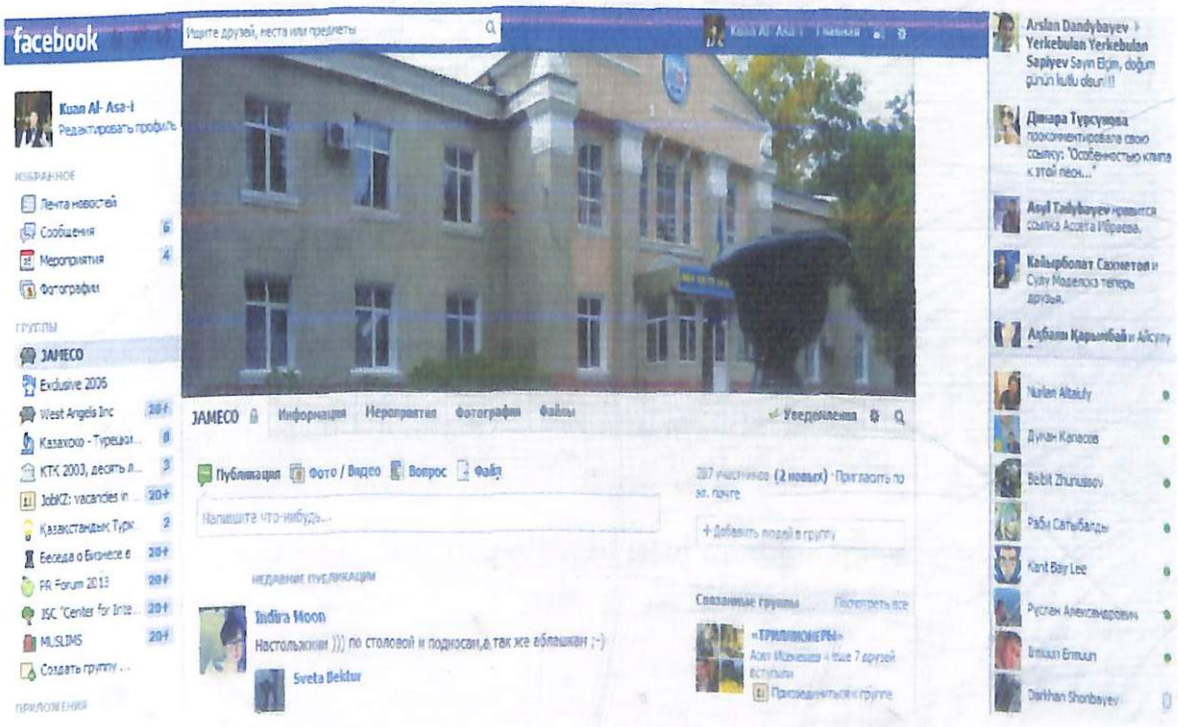
communication with entrants by Internet. Also there are a number of duties carried out by members of department, such as making work with different programs.


Picture14. Website of Kazakh-Turkish College of Economics

Mails of potential entrants have been collected from questionnaires transformed in an electronic kind. Communication with pupils has been established through groups in Facebook, Вконтакте, Mail.ru and our website www.jameco.kz. All necessary information is given in groups in Internet and it describes from different directions college to entrants that entices the greatest quantity of students.




Picture15. College's public in social network vkontakte.com




Picture16. The group of college in social network Facebook

Department of technology and support is engaged still in other things, such as work with programs on a computer, drawing up of presentations, drawing up of a map of pupils abroad, a calendar, and etc.At present the department to be in a heat of work and will last till the examination day.

**Motivation** is a psychological feature that arouses an organism to act towards a desired goal and elicits, controls, and sustains certain goal-directed behaviors. It can be considered a driving force; a psychological one that compels or reinforces an action toward a desired goal. Kazakh – Turkish college of economics prepared iPad mini for the first place on examination for applicants as a motivation. This idea is going to bring to college another new applicant who are confident in their selves and develop the knowledge of applicants who were interested before.


Picture17. Advertisement of iPad mini for applicants


Picture18. Students of JAMECO who are abroad

So every applicant can see only one side of persectives that our college give to their students.

**Organiation department**

One of departments of club is operation department.The main duties of given department are:

1. Organization of meetings
2. Carrying out the castings related to different activities
3. Organization of every day's activity

Organization of meetings is one of the duties of this department. This function is very important for PMM because on meetings all of the responsible faces tell about work they have done and takes another work to do. Meeting takes place one time in a week on etud time so every member have chance to participate.

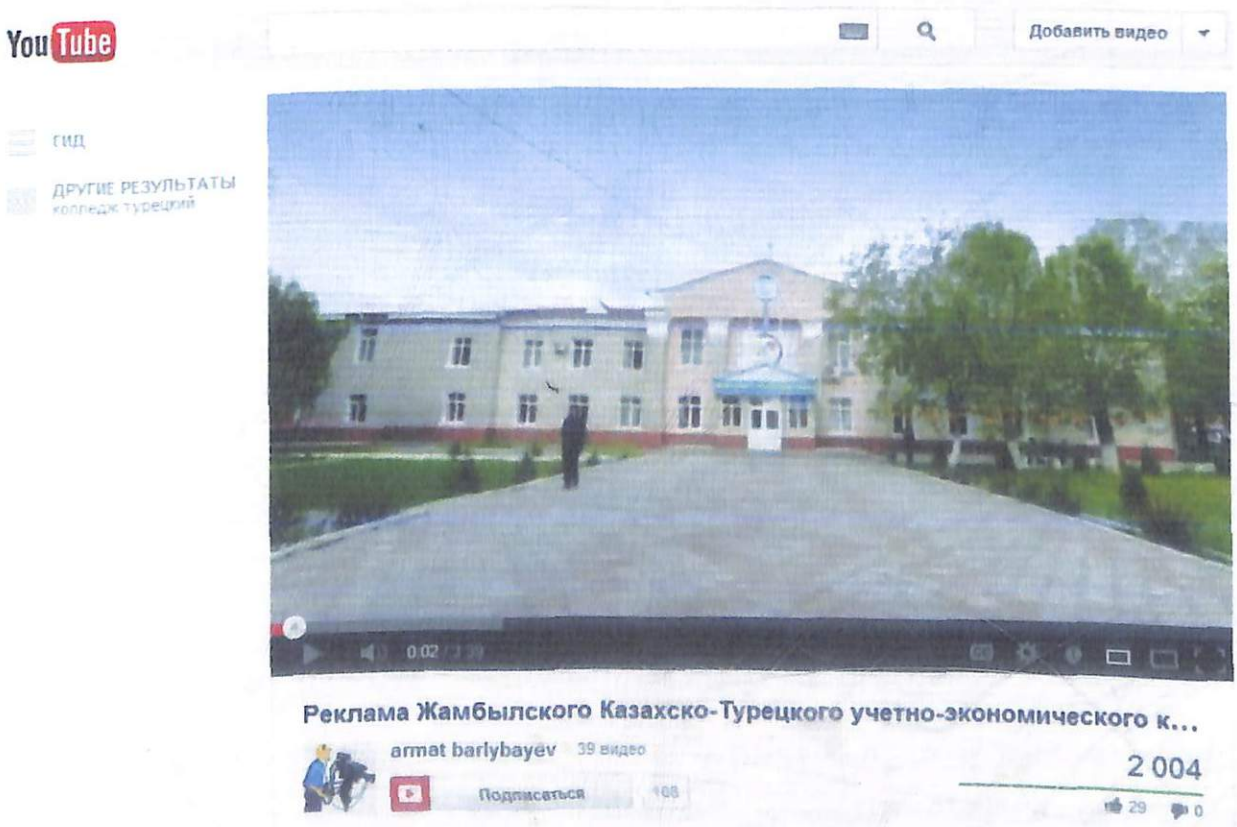
The numerous quantities of actions have been lead. One of them shooting of an advertising video clip of the college devoted to the twentieth anniversary. Work was spent in cooperation with specially called operator Armat Barlybaev. On removal of an advertising video clip the given department was engaged in the basic organization. The necessary materials for shootings have been organized casting and all other

duties. It prepared cabinets, a sports hall, a hostel and all places necessary for shootings.

*PMM made a video introduction of Jambyl Kazakh Turkish College. This film* is like a chain of interviews given by students and teachers. All of them told about *college from different angles. This film was directed by our 2009 graduate Armat* Barlabaev. Nowadays he studies at University of Stirling in Scotland. That is why we can say that this film was promoted by professional.

If about relation to advertisement at schools we showed this video firstly before speech for drawing the attention of pupils. All of our presentation including the video introduction made very striking effect on potential applicants.

Then we downloaded our video introduction into YouTube, Vkontkte, mail.ru, Facebook. First day on Facebook 1000 people watched our video. Advertsemental video of college had success between pupils, applicants, students, graduates.




Picture19. Screenshot of video introduction

Another future work of this department is real presentation of college to applicants. Future students are going to stay in dormitory, prepare to examination

with our teachers and feel the student's life during three days before examination. The applicants from city are going to live at college in the first thread and the regional applicants are going to participate to this program in the second thread.

All of these programs will show the college from the inside and will more motivate pupils to enter this college. There is going to be prepared every days college's activities. For example, tea times, interesting lessons, programs of talents and etc.

| Time | Activity |
|---|---|
| 07:00-07:30 | Wake up and wash up |
| 07:30-08:00 | Breakfast |
| 08:00-09:00 | Self preparation to the exam |
| 09:00-13:00 | Lessons |
| 13:00-14:00 | Lunch |
| 14:00-17:00 | Different activities |
| 17:00-18:00 | Free time |
| 18:00-19:00 | Dinner |
| 19:00-21:00 | Etud: homewor time |
| 21:00-22:30 | Activities |
| 22:30-23:00 | Preparation to dream |
| 23:00-07:00 | Dream |

Table7.Time shcedule for applicants on 3 days living at college

All of college's programs and activities is going to promote Jambyl Kazakh – Turkish College of Economics by word of mouse. This is type of marketing that pass the information from person to person by oral communication, which could be as simple as telling someone the time of day. Storytelling is a common form of word-of-mouth communication where one person tells others a story about a real event or

something made up. So PMM is going to reach the aim by its marketing and management.

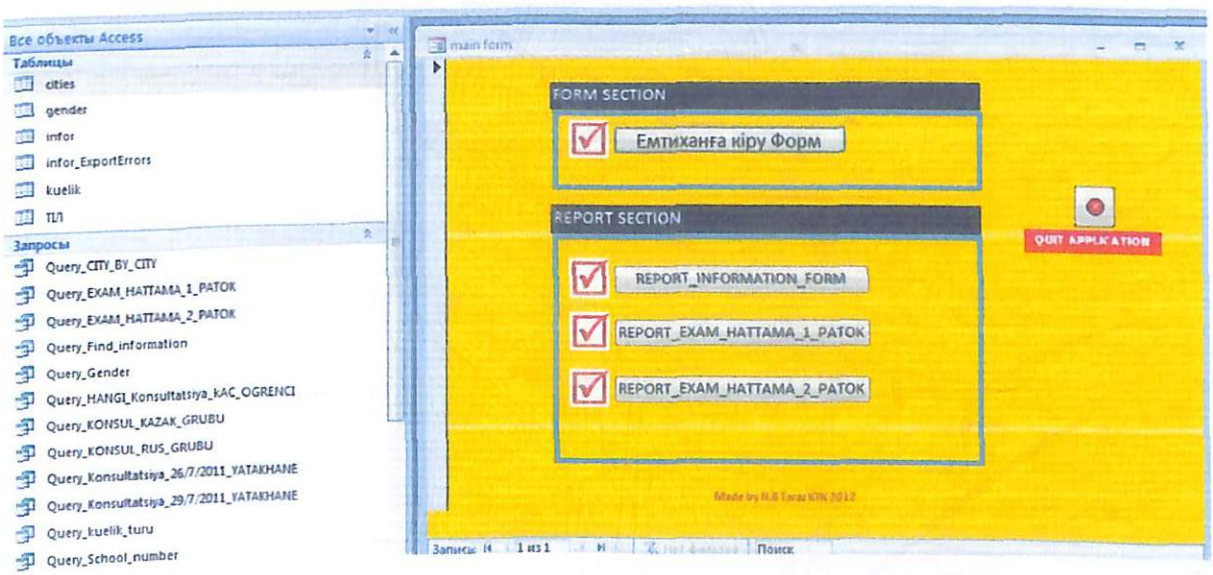
In 2012 there were 300 enrollees to Jambyl Kazakh Turkish Economy College. In that year the promotions were held in traditional ways. There were up to 13 000 students who attempted our face to face presentations in all schools of Jambyl region. If to make proportion, or make calculation of effectiveness of campaign, the result will be 300*100/ 13000 = 2.3%

In 2013 campaign was designed differently, and focused on effectiveness of resources. Jameco really desired to make high effective student selection process. College's management decided to focus just on schools, which are supplying to us major amount of students. Focus means that in schools A (see table 2) PMM will held full circle of promotion, face to face presentation with video, educated presenters, full filling Pre-application enquiry form, hand out brochures. Schools from category B and C are sent by PMM A3 Prints.

There were 5000 attendants to our face to face presentations, and 2700 applicants form Pre-application enquiry form.

### 2.3.2 JAMECO Student Recorder 2013

Jameco Student recorder program for pre-registration and student information from the banks we create by our students to register. However; there are important functions Students Entry Card, Sorting city by city, enrolements to prepare the student reports, Finds student information by using Id,name,surname and city name. However, the number of students in Kazakh and Russian group is written to the database.State and city will be taken into database only are students. However, there are only students identified as gifted.

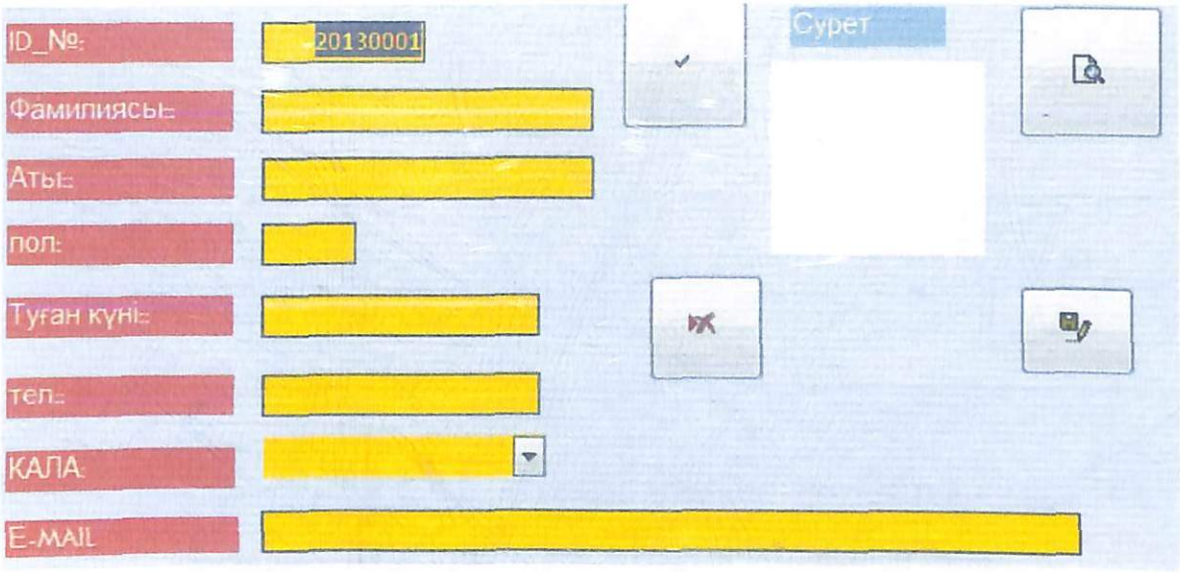



Picture20. Jameco Student Recorder 2013

Open jameco student recorder 2013 program. Right side on the display form section, report section ve quit application.If the left side of the screen is used to create the database tables, queries, forms, macros, and has a report.


Picture21: Enter Registration Form

When you click this button opened registration form




Picture22. Registration Form

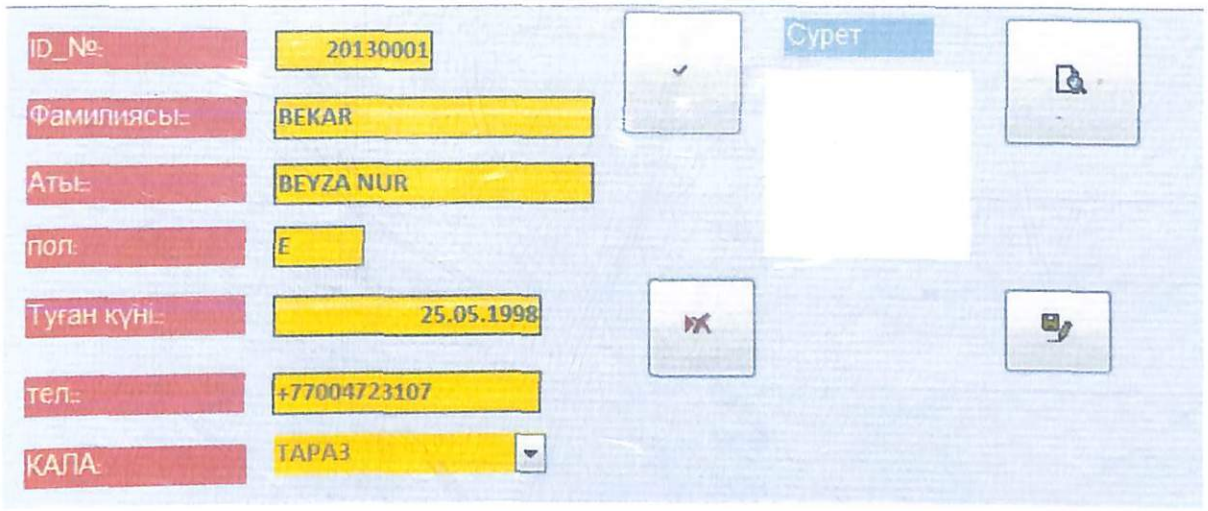
There some information areas;

- Student ID Number
- Student Surname
- Student Name
- Student School name
- Student Gender
- Student Birth Date
- Mobile Phone
- City
- E-Mail

There are some buttons;


Picture24. Buttons

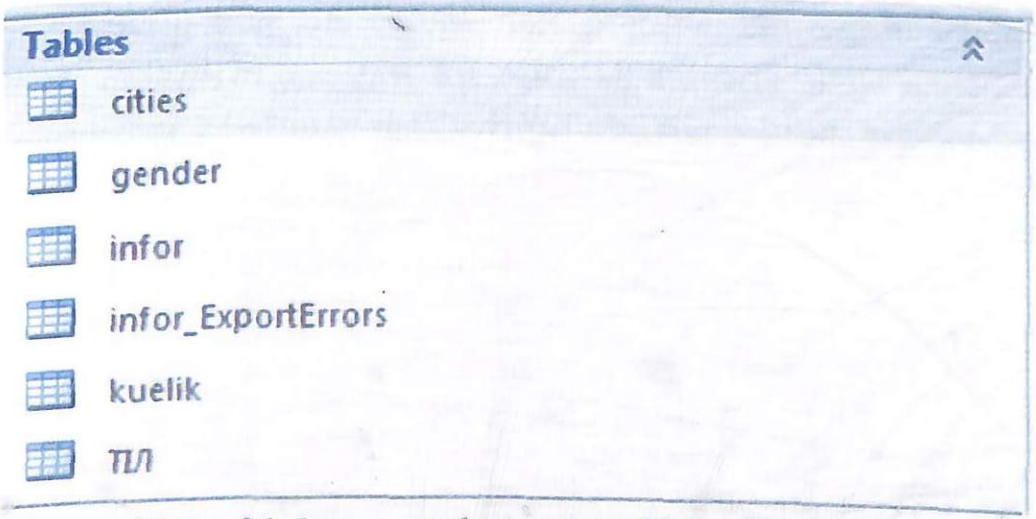
After enter student information you must click SAVE button




Picture25. After view of Enter student information form

There are some tables;

As you know tables is database object that stores information that relates to one entity. All data is stored in tables. When you create a new table, Access asks you define **fields** (column headings), giving each a unique name, and telling Access the **data type**. Use the "Text" type for most data, including numbers that don't need to be added e.g. phone numbers or postal codes. Using Wizards, Access will walk you through the process of creating common tables such as lists of names and addresses. Once you have defined a table's structure, you can enter data. Each new row that you add to the table is called a **record**.



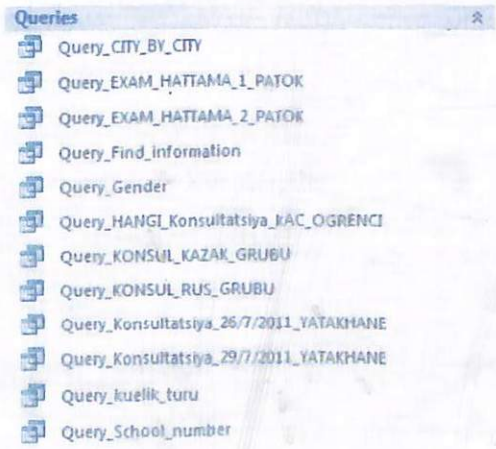

Picture26. Jameco student register 2013 tables **fields**

| Field Name | Data Type |
|---|---|
| ID_NO | Number |
| Фамилиясы: | Text |
| Аты: | Text |
| пол | Text |
| Туған күні: | Text |
| Сурет | Text |
| тел: | Text |
| КАЛА | Text |
| Мектебі: | Text |
| КУӘЛІК ТҮРІ | Text |
| ОҚУ ТІЛІ | Text |
| Мекен-жайы: | Text |
| КОНСУЛЬТАЦИЯ КҮНІ | Text |
| Аудитория №: | Text |
| Парта №: | Text |

Picture27.Jameco student regıster 2013 tables **data types**

There are some queries;

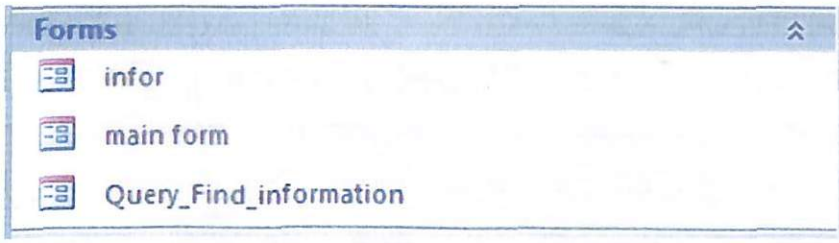
Use a query to find or operate on the data in your tables. With a query, you can display the records that match certain **criteria** (e.g. all the members called "Barry"), **sort** the data as you please (e.g. by Surname), and even **combine data** from different tables. You can **edit** the data displayed in a query (in most cases), and the data in the underlying table will change. Special queries can also be defined to make **wholesale changes** to your data, e.g. delete all members whose subscriptions are 2 years overdue, or set a "State" field to "WA" wherever postcode begins with 6.




Picture 28. JAMECO STUDENT REGISTER 2013 queries

There are some Forms;

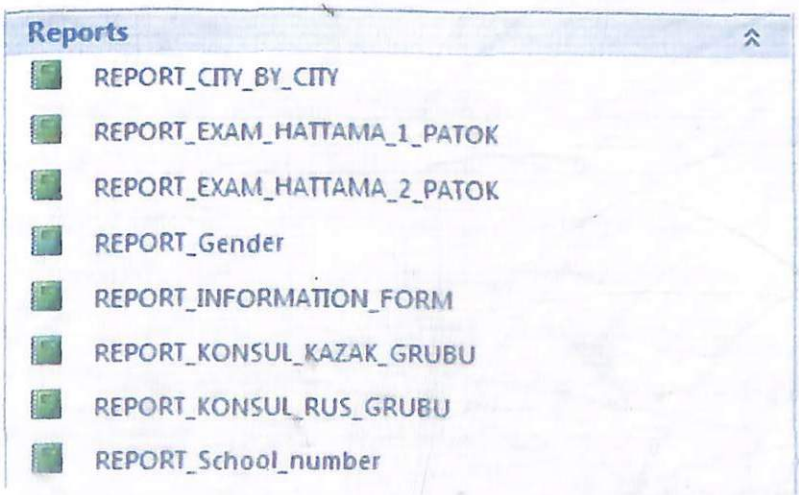
These are screens for **displaying** data from and **inputting** data into your tables. The basic form has an appearance similar to an index card: it shows only one record at a time, with a different field on each line. If you want to control how the records are **sorted,** define a query first, and then create a form based on the query. If you have defined a one-to-many relationship between two tables, use the "**Subform**" Wizard to create a form which contains another form. The subform will then display only the records matching the one on the main form.




Picture29. JAMECO STUDENT REGISTER 2013 forms

There are some report;

Reports are a great way to organize and present data from your Microsoft Access database. Reports enable you to format your data in an attractive and informative layout for printing or viewing on screen.




Picture30. JAMECO STUDENT REGISTER 2013 Reports

# CONCLUSION

In summary JAMECO Jambul Kazakh Turkish Economy College students with a program of REGORDER creating a permanent archiving data base operations is estimated to be stored successfully.

This thesis is not only to Jambul College Kazakh Turkish Economy. Jambul state will set an example for colleges and vocational schools and even universities. In addition, all the advertising and education as a model for other institutions Jambul College Kazakh Turkish Economy in solidarity with a full service ready to help and advise.

All of college's programs and activities is going to promote Jambyl Kazakh –Turkish College of Economics by word of mouse. This is type of marketing that pass the information from person to person by oral communication, which could be as simple as telling someone the time of day. Storytelling is a common form of word-of-mouth communication where one person tells others a story about a real event or something made up. So PMM is going to reach the aim by its marketing and management.

In 2012 there were 300 enrollees to Jambyl Kazakh Turkish Economy College. In that year the promotions were held in traditional ways. There were up to 13 000 students who attempted our face to face presentations in all schools of Jambyl region. If to make proportion, or make calculation of effectiveness of campaign, the result will be 300*100/ 13000 = 2.3%

In 2013 campaign was designed differently, and focused on effectiveness of resources. Jameco really desired to make high effective student selection process. College's management decided to focus just on schools, which are supplying to us major amount of students. Focus means that in schools A (see table 2) PMM will held full circle of promotion, face to face presentation with video, educated presenters, full filling Pre-application enquiry form, hand out brochures. Schools from category B and C are sent by PMM A3 Prints.

There were 5000 attendants to our face to face presentations, and 2700 applicants form Pre-application enquiry form.

Friendship and trust between Kazakhstan and Turkey, and at the same time which is representative of the economic cooperation between the two countries is an important contribution to the development. (1997-2013 Number of Graduates 315 842 Number of graduates working in companies that Kazakh Turkish cooperation is up to 40%)

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