



Etelareshani Payvand Dadeha (EPD Co. Ltd)
Medical IT Company (software)

WWW.EPD.IR

Introduction

On May 14, 1998, EPD was established by a group of Health Informatics professionals and physicians. EPD has a wealth of experience in producing various healthcare solutions, including but not limited to:

- Health Information System (HIS)
- Clinical Information System (CIS)
- Radiology Information System (RIS)
- Laboratory Information System (LIS)
- Pharmacology Information System (PIS)
- Picture and Archiving Communication System (PACS)
- Business Intelligence (BI)
- Customer ordering software

Over two decades of operations, EPD had developed knowledge in health informatics processes and standards (HL7, Coding, HIPPA, DICOM, etc.).

EPD has received Rank 1 by the National Agency for Management and Planning.

Our **HIS** and **PACS** systems had received "Knowledge Based", and our company got ISO 9001, and ISO 10004 certifications.

We are very proud of the trust that our numerous healthcare clients trust us and use our solutions.

Currently, EPD, with its experienced and passionate team, is the largest health informatics company in Iran.

EPD's new and enhanced SaaS-enabled version of Health Information System is available across many platforms (PC, tablet, mobile) and will soon be available to select international healthcare providers.





Vision

To offer the best added value services in health informatics setting

Mission Statement

To develop added value services in health informatics to improve quality of care, performance of healthcare providers, and healthcare center's business outcomes.

Responsibility to customers

Our clients are our partners, and we are responsible for developing solutions that enhance outcomes, improve quality of services, and increase the level of customer satisfaction.

Vision

Mission Statement

Responsibility To Customers



HIS

Payvand HIS System

Payvand HIS was the first Windows based Health Information System in Iran, and advanced considerably over more than past twenty years. Today, Payvand HIS system is the most comprehensive and reliable Healthcare Information System in Iran.

This modular system is suitable for all healthcare center with any sizes, from small clinics to complex multi hospitals hub.

During past 3 years by using the most advanced technologies, some part of this software is now available in SaaS rather than client server versions.



Providing Cloud Computing SaaS Software Services in e-health.

This technology enables to use software services without full license purchase. This method eliminates many responsibilities for the user, including purchasing servers, operational systems, etc. The user will be only responsible for paying for the services that they are using. Payvand cloud computing software as a services (SaaS), are compatible with all operational systems and hardware (PC, mobile, and tablet), and any operational system like: windows, android, ISO, Linux, ..

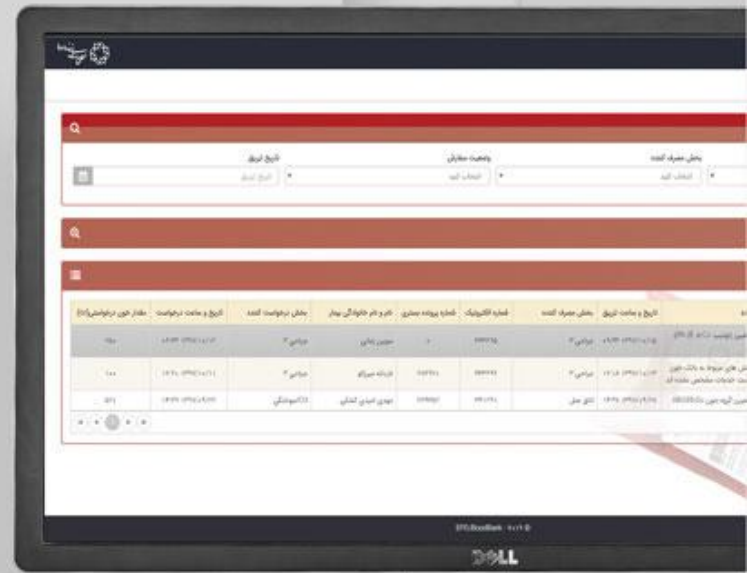
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Payvand HIS system includes variety of modules:

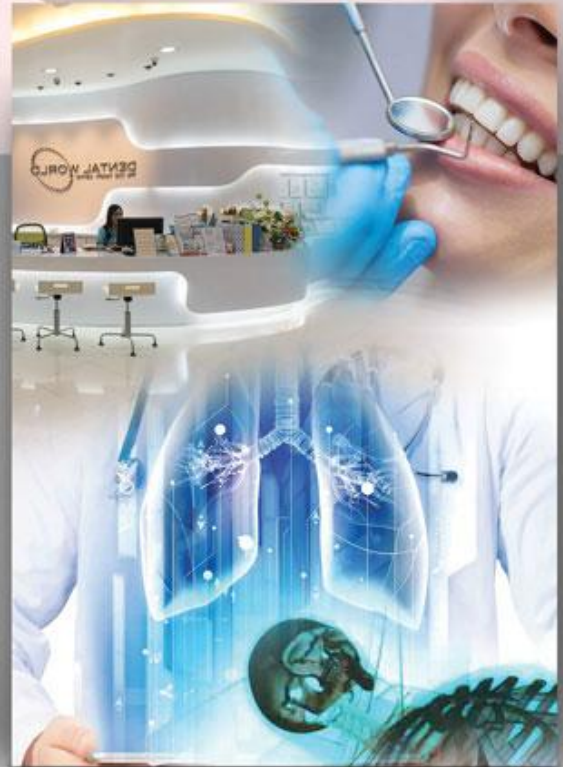
HIS Basic Applications:

- ❏ Patient registration
- ❏ Patient administration
- ❏ Clinical Information System (CIS)
- ❏ Electronic Medical Record (EMR)
- ❏ Emergency Wards (inpatient, outpatient, under observation)
- ❏ Wards and patient displacement
- ❏ The operating rooms
- ❏ Pregnant mother follow up
- ❏ Childbirth & birth certification
- ❏ Death certification
- ❏ Medical documents ward
- ❏ Cash desk with connection to the POS
- ❏ The contribution of the treatment staff
- ❏ Discharge
- ❏ Accounting and billing
- ❏ Claims and Reimbursement
- ❏ Appointment (SaaS)



HIS Para clinic applications:

- Pharmacy Information System (PIS)
- Laboratory Information System (LIS)
- Pathology Information System
- Blood Bank Information System (BBIS)
- Radiology Information System (RIS)
- Dialysis Information System
- Physiotherapy Information System
- Dental Information System



Data Interoperability:

- Identity inquiry
- Referral system
- Data transfer with Iranian EHR with ISO/TC 13606
- By directional communication with PACS
- Online and offline Data transfer with Insurance systems
- EPD Communication system with patients and health Care professionals (SaaS)



Additional and Auxiliary softwares :

- Medical Error Information System
- Query Generator
- Management of patient physical documentary
- Electronic Notice board
- Ticketing (SaaS)
- Dental Information System



Additional and Auxiliary software :

- Advance Hospital Dashboard
- Human Resource Information System (HRIS)
- Questionnaires
- Security Information System
- EPD Communication system with patients and health Care professionals (SaaS)





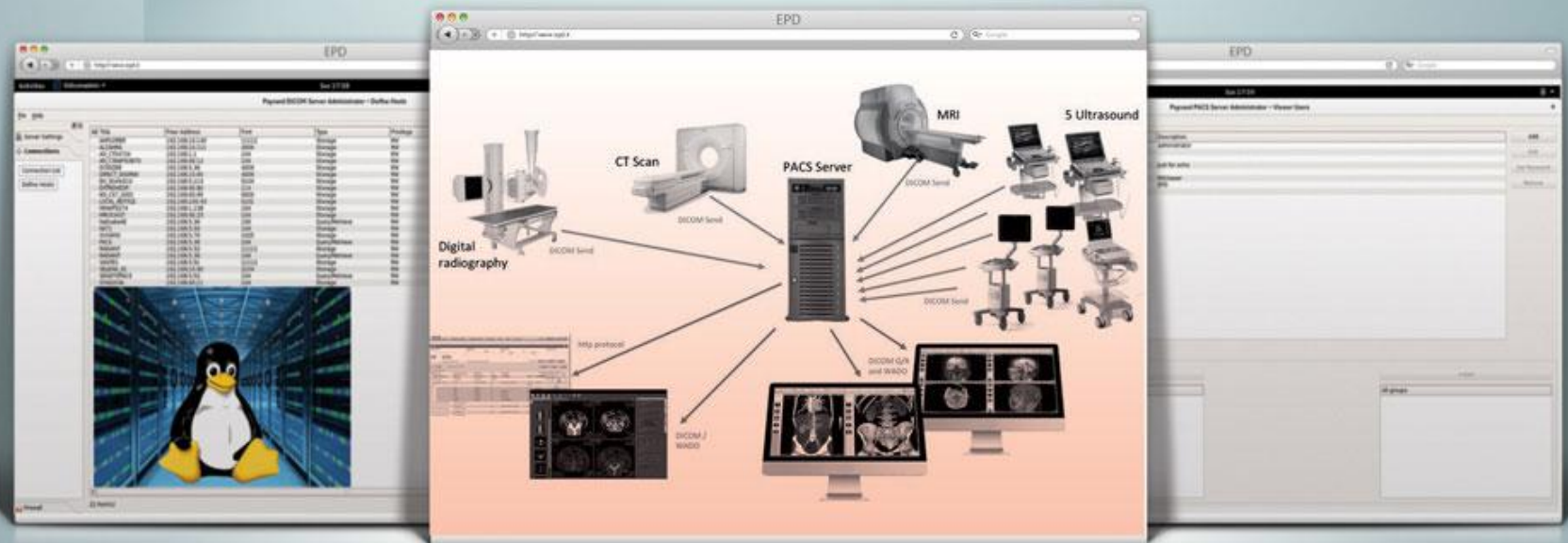
Payvand Picture Archiving & Communication System
(Payvand PACS)

PACS

Payvand PACS Server

PD Main purpose of PACS systems is to connect with all variety of standard imaging modalities, receive DICOM images, and to save, process and send images based on the DICOM 3 standard.

Payvand PACS manages all these activities with its highly advanced Linux based server (Open source platform). Payvand PACS server is equipped with different security approaches to prevent any unauthorized access.



Payvand Picture Archiving & Communication System

Payvand Tele-radiology

Nowadays, Tele-radiology become a pressing need in healthcare. Fast, secure, and high-quality access to patients' images are required for a full PACS system. With Payvand Tele-radiology, physicians can easily access their patients' images, reports, and consultation notes through internet. Physicians can document their reports from anywhere in the world.

This web based system is compatible with PC, tablet, and mobile devices and does not require any additional settings or softwear.

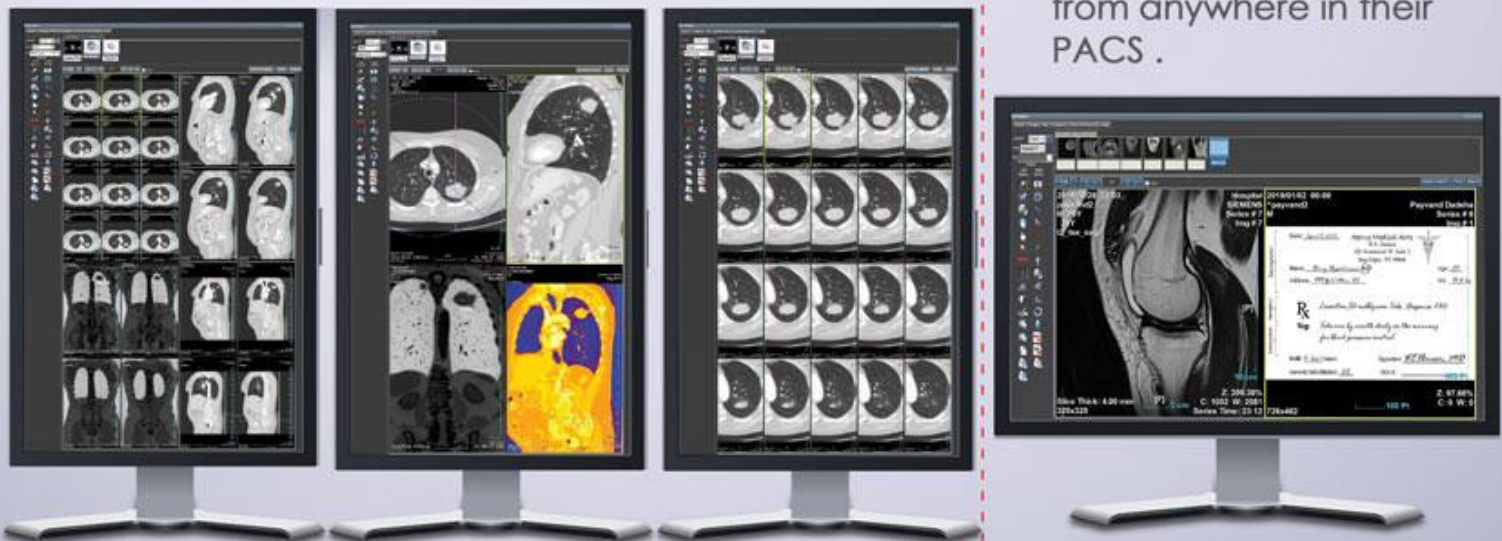


Diagnostic Workstation

In addition to general functions of a DICOM viewer, like: changing contrast, size, and etc., Payvand Diagnostic Workstation provides specific features to healthcare providers:

- GA Performing standalone or in a hub of different Payvand Servers (WAN)
- GA Processing images to create Multiplanar Reconstruction (MPR) in Coronal, Sagittal, and Oblique view
- GA Supporting up to 4 separate monitors simultaneously
- GA Ability to create "Favorites" to save particular cases
- GA Documenting voice and text with DICOM standard
- GA Real time demonstration and comparison of patient's images with their or other patients' images.
- GA Sending alerts and text messages to physicians via SMS.
- GA Ability to compare images pre and post procedures such as MRI injections
- GA Dicomizer for converting non DICOM images to the DICOM format.
- GA Ability to print on paper and DICOM film images

Normally, radiologists are not able to have access to patients' data and images outside of their healthcare facility. With Payvand Dicomizer system, clinicians are able to see patients' images, important data, progress notes, or many other items from anywhere in their PACS.



Workstation DICOM Viewers

With Payvand Workstation DICOM Viewers, authorized users have access to patients' images and reports in any section of their health care system.

By processing images with Payvand's web or Windows based viewers, there will be no need to use X-Ray or Radiology films in any part of Hospital.



DICOM Worklist

Proper data exchange between HIS and modalities is one of the missing pieces in full atomization of healthcare centers.

Majority of the HIS system vendor companies do not have the knowledge or authority to make this connection. It has been more than a decade that Payvand provided connection between any HIS system and any standard modality. With this functionality, RIS information will be automatically uploaded in the modalities via a DICOM worklist standards.



This feature is far beyond the ability to call PACS images by HIS

Dental PACS

Payvand Dental PACS is available for specialized dental imaging centers. This software eliminates the need for printing dental images and enables health care professionals to view and process their patients' images from anywhere based on their user access level.



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Print Server

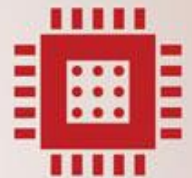
Many radiology centers were able to better manage their costs and reduce their environmental waste just by using Payvand PACS Server.

These centers are able to give patients a copy of their DICOM based digital images to assist in a more accurate and faster diagnosis as a DICOM base CD, or print the images on A3 or A4 paper. (Important notice: all the paper print have 8 bit quality)



CD Robot Software

Payvand CD Robot Software is a more cost effective and reliable solution to physical CD robots that are going higher in price. The images are sent through modalities to the CD Robot software. The system puts the information in the queue to be burnt on CD.



Enterprise PACS

This system is responsible for cohesiveness of the DICOM images across all healthcare centers of a university or region.

Payvand Enterprise PACS will enable easy access to patient records that are archived in any of these various centers. This solution contributes significantly to cost reductions, and faster and more accurate diagnosis.





Business Intelligence in Health Care



Business Intelligence in Health Care

With the advancements in promoting health and increasing life expectancy, health sector is encountering new and critical challenges. Expectations of the quality of healthcare services had been changed and became one of the top five national strategies in many countries.

The increased longevity heavily influenced health expenditures. Also, competition in providing healthcare services (in both public and private sectors). These factors made healthcare into a very challenging industry. The volume of the medical data produced is progressively increasing.

Transforming these data into knowledge and wisdom for health promotion and optimization of cost management requires new solutions.

Intelligent analysis of data and proper use of Business Intelligence is one of these solutions.



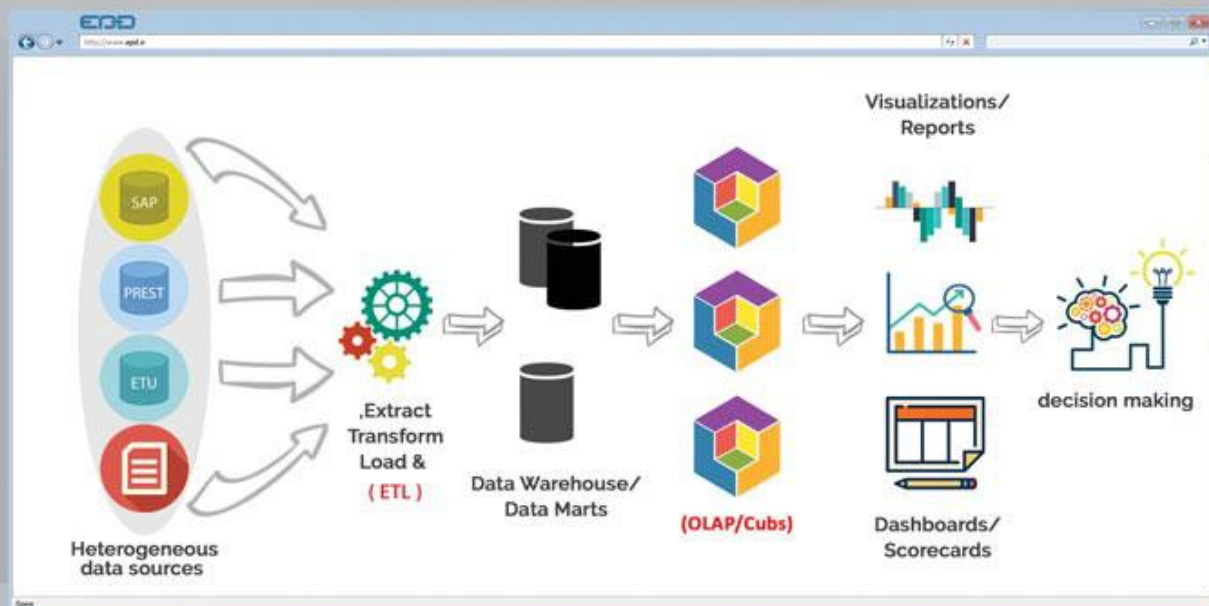
Business Intelligence is a technology that enables processing and demonstrating useful information. This information will lead to better administrative and business decisions. Based on the implementation model, BI can be used for operational, administrative and strategic purposes.

It should be noted that still human factor, as the ultimate beneficiary of BI systems, remains the main decision-maker.



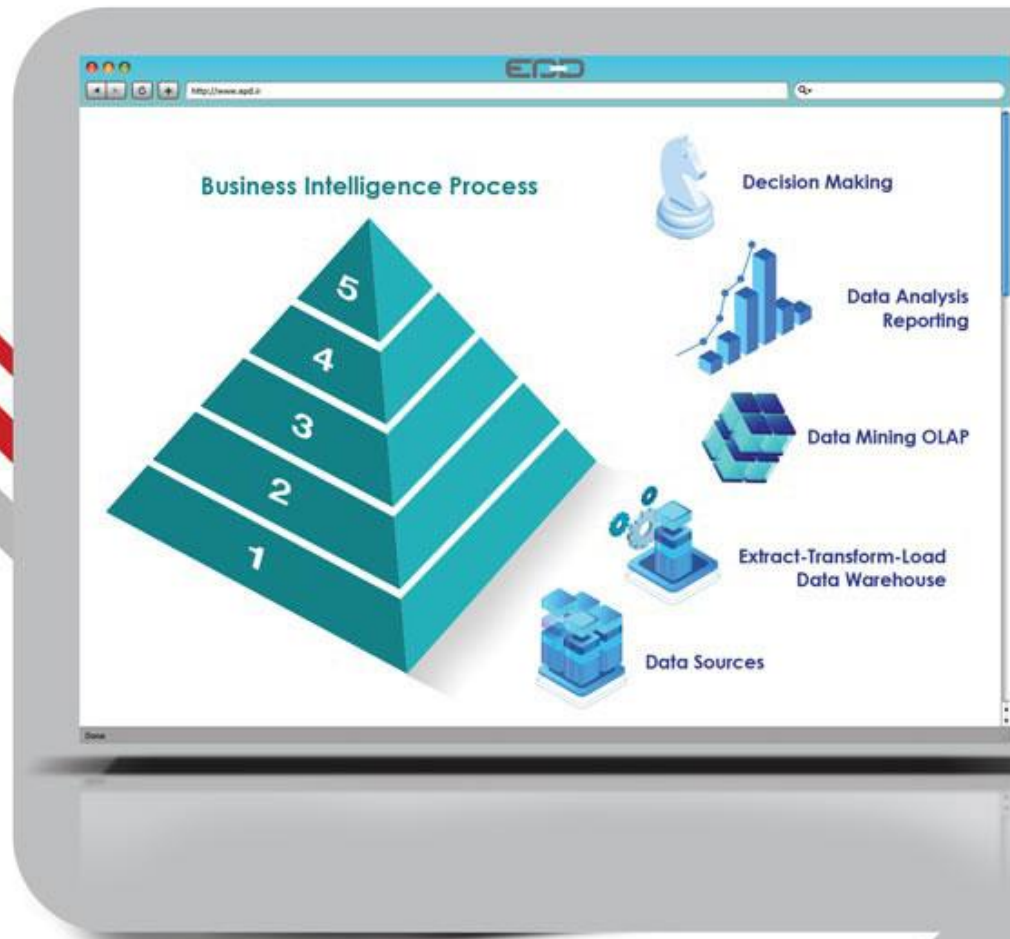
The most important Business Intelligence applications in healthcare industry are:

- Improving the quality of care
- Reduce and better manage healthcare costs
- Enhancing clinical decision making
- Detecting and decreasing treatment complications and decreasing re-admissions
- Identifying bottlenecks and improving healthcare services and organizational workflows
- Increasing patient safety
- Monitoring quality of the provided services in healthcare centers
- Improving patients satisfaction
- Assistance in research, development, and training
- Disease prevention
- Improving the prediction of the healthcare status in the future
- Improving the competitiveness of the healthcare centers as an economic enterprise



Business intelligence processes

- Deferent data sources (with deferent format)
- Extract, transform load of data from the data sources to the Data Warehouse
- Data analysis with Online Analytical Processing (OLAP/Cube)
- Advance visualized view of results, with the dashboards format
- Decision making



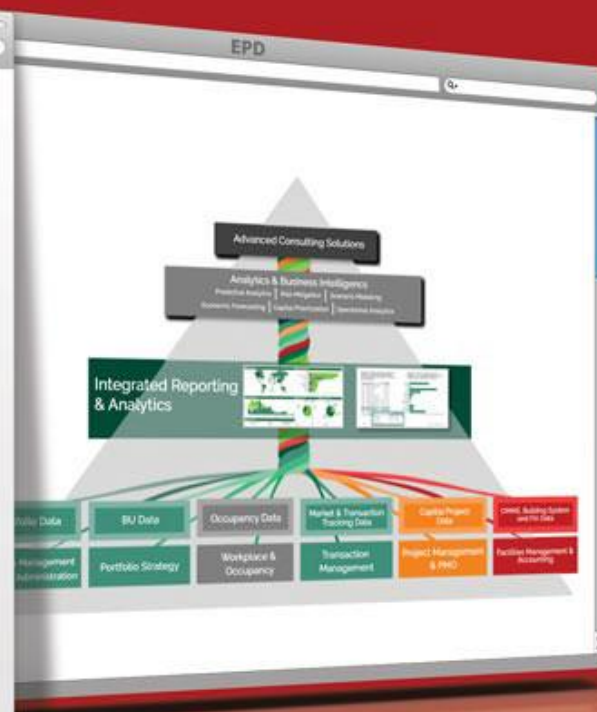
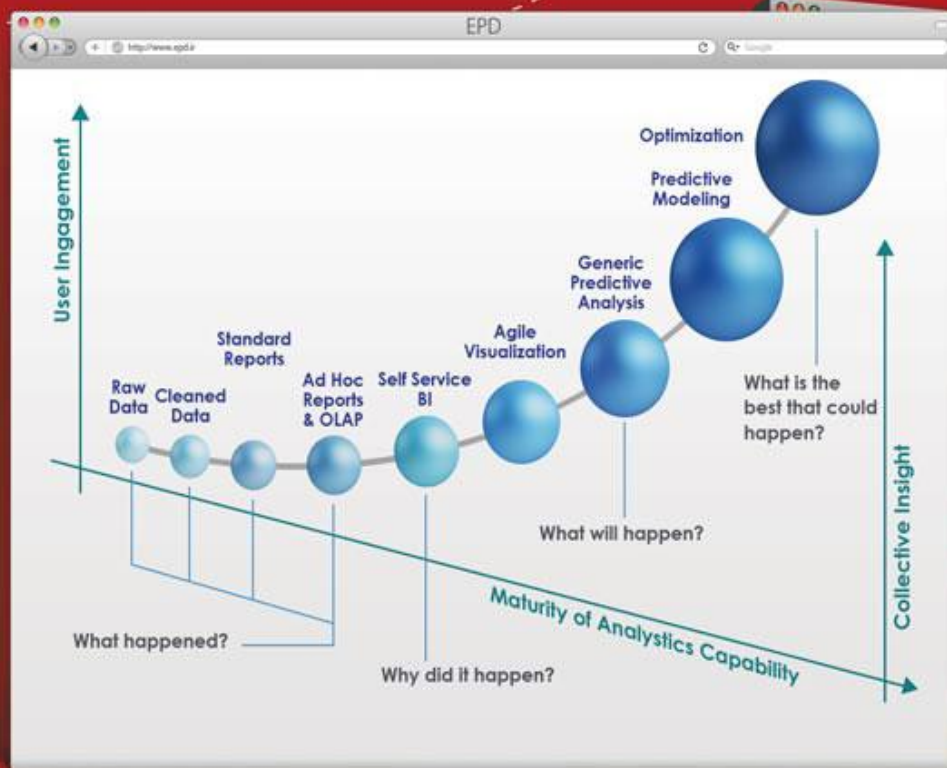
It should be considered that Rational relationship model cannot be used for creating and managing big data.



{ Business Intelligent in Health Care }

The ability to analyze information, from raw data to having the right point of view of the future events, is constantly increasing.

Payvand was able to achieve agile visualization level in their Business Intelligence system.



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Payvand Administrative BI Dashboards Specialized in Healthcare

Payvand is committed to improve the level of health informatics. As a result, we developed two deferent kind of dashboards for administrative, strategic, and operational dashboards for Health Information Systems.

Hospital level dashboards:

This kind of dashboards are mainly used for administrative and management decisions based on real hospital data. By this model of dashboards all the responsible person can manage deferent data in the real time and one view like:

- ❏ Status of Data Interoparatabality,
- ❏ Income (cash, digital money, commitment, debit...)
- ❏ Active clinics, physicians, ...
- ❏ Bed status, stay period ...
- ❏ Services related to deferent section or physician,...



Payvand Administrative BI Dashboards Specialized in Healthcare



Payvand Integrated BI system is the highest level of healthcare data analysis in healthcare centers in Iran.

This system gathered information from different healthcare centers by extract, transform, load method (ETL), and then will be cleaned, concentrated, processed, and visualized cubed data on the dashboards.

Payvand BI used for administrative and strategic dashboards for demonstrating online analytic process (OLAP).

Outcomes of Payvand Integrated BI System:

- Ability to view and compare advanced analysis for different data sets from different centers.
- Ability to run different advanced analytical dashboards, such as financial, diagnosis, pharmaceutical, healthcare providers, hospital units, clinics, medical services, etc.
- Ability to provide analytical reports on different medicine repository inventory



business intelligence Link in the field of health



EPD Appointment System

(Software as a Service)

- Within the past two decades, EPD designed, developed and operated a number of scheduling systems for our clients. The latest version of our scheduling system is web-based and supports multiple platforms.

It is one of EPD's top priorities to remain on the cutting-edge of technology while adapting to the constantly evolving needs and requirements of healthcare settings. With this in mind, our latest released scheduling software is SaaS-enabled which is available on the Cloud.



➤ In addition to all the basic features of a healthcare-based scheduling system, the new version has the following added values to the users:

- EPD Software as a Service with no need for any program installation by clients
- EPD is responsible for all system maintenance, servers, licence, security and support.
- Advanced security at OWASP 4 Level
- Ability to communicate with any standard HIS or healthcare systems.
- Compliance with the Iran's Ministry of Health's new guidelines for the exchange of data for scheduling and referral systems with HIS & CIS.
- Simple and elegant user interface for patients, healthcare providers and staffs
- Compatibility to operate on any type of kiosks
- Ability to define multiple healthcare centers under a centralized management
- Ability to schedule appointments and manage referral online separately for each center, healthcare provider, etc.
- Ability to control conflict in care providers and patients schedules in different clinics.
- Ability to record the actual attendance time of a clinic's clinical staffs and its standard deviation with the scheduled appointments.
- Using the cutting-edge technology for designing and operating the solution.



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