iKnowHow Informatics S.A.

Pioneering Towards Achievements

R&D Actvities & Portfolio

September 2011

Company History

- **Independent Technology Consulting & Software Development Firm**
- Founded in **2002**
- **ISO 9001:2008, ISO 27001** Certified
- **ISO 20000-1** Certification in progress
- Continuously growing and gaining ground ever since.....
- .....combining technology and business expertise...
- **Now a key player in Greek Engineering,IT & S/W Market in 2011**

Facts & Figures....

✓**9** years of presence in the market

✓More than **50** successfully delivered projects

✓More than **15** R&D initiatives and leads

✓**600%** sales increase in 6 years

✓Turnaround **3,4 Million** Annually over the last 3 Years

✓Twenty **six(26) High Qualified Engineers** (6 Phd, 9 Msc,11 Bachelor)

Company History

Partnerships

- 2006: Oracle certified Partner
- 2007: Microsoft Certified Partner
- 2009: HP Certified Partner
- 2010: SIHOT Certified Partner – Distributor (Greece, Cyprus)

Closer Look At the Product Line

Research and Development/Engineering Services

SW & Application Development

Engineering & IT Consulting

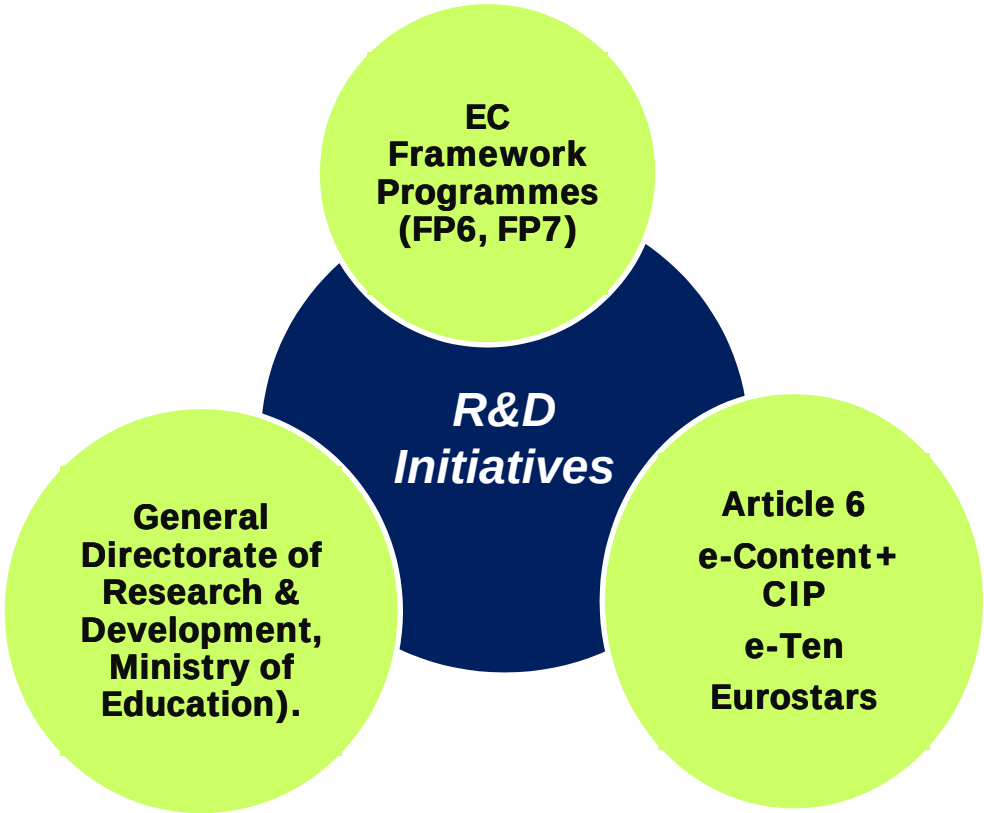
Integration - Managed Services

e-tourism and iHotel Applications

International Business Development

Research & Development

- ✓ Participation & Leading more than 15 R&D Projects
- ✓ European Commission & National Initiatives & Funding



Inspired by new business opportunities….

researching ambitious solutions….

developing innovative services….

Research & Development Projects

Article 6 – European Social Fund Projects

- **SPEKs - Creating Value through Change: Anthropocentric approach bringing together Social Partners, Enterprises and Knowledge Providers**

  The study and the development of innovative management systems and supportive IT tools for an overall approach on Change Management and the establishment of an Observatory for management of change. http://speks.zenon.gr/

- **ACTION-L.IN.C. – Action for Leather Integrated Cooperation**

  Application of innovative HR management techniques to SMEs in the leather production and manufacturing, where most of the workforce is aged and has a lack of new skills.
  http://www.actionlinc.eu

eTen – Trans European Projects

- **SOCIAL VILLAGE - Single European Access to Social Welfare for Disadvantaged Citizens in Mobility**

  The Social Village project aims at creating an unique gateway for European Social Districts, allowing a multi-channel access to social e-services for citizens with disabilities (aged person, people with handicap, immigrants) and enabling the cross-border co-operation between welfare workers and citizen, in order to satisfy increasing mobility needs for tourism, jobs, healthcare and social integration. www.socialvillage.eu

Research & Development Projects

FP6 Projects

- **TERAEYE - A low cost and fully passive Terahertz inspection system based on nano-technology for security application**

  The objective of TERAEYE is to develop an innovative range of inspecting passive systems, based on Terahertz (THz) wave detection, to detect harmful materials for homeland security. Main applications will be related to airports security systems, surveillance of crowded areas such as railway and metro stations; detection of chemical and biological harmful substances and hazards in post and goods. www.teraeye.com

- **POLYTECT - Polyfunctional Technical Textiles Against Natural Hazards COSMOS – An advanced Scientific Repository for Science Teaching and Learning**

  The project focuses on the co-operative cross sectoral development of multifunctional textile structures to be used in the construction industry for the protection against natural hazards. Two main application domains, retrofitting of masonry structures and earth structures, have been evaluated as representative case studies that embrace development of high added value products in textile sector, enabling methodology scalability. www.polytect.net

- **HEBE – Mobile monitoring and automatic fall detection device for elderly people living alone**

  The global ageing population is growing inexorably and in few years half of the adult population will be over 50. These trends are more significant in developed countries such as EU countries. This project tends to develop an outdoor remote activity monitoring and automatic alert system based on the use accelerometers and additional supporting sensors to evaluate user's mobility and to detect user's falls.

Research & Development Projects

eContent+ Projects

- **OPENSCIENCERESOURCES - Towards the development of a Shared Digital Repository for Formal and Informal Science Education**

  The aim of the OSR project is to create a shared repository of scientific digital objects - currently dispersed in European science museums and science centres - to make them more widely and coherently available, searchable and usable in the context of formal and informal learning. The envisaged approach consists of metadata ontological approaches coupling them with modern social tagging and folksonomies. www.osrportal.eu

- **COSMOS: An advanced scientific repository for science teaching and learning**

  The main purpose of the COSMOS project is to create an experimental laboratory for students and teachers in order to improve science instruction by expanding the resources for teaching and learning in schools and universities and by providing more challenging and authentic learning experiences for students. The project will build upon the state of the art developments as regards the interoperability architectures and metadata standards and the latest evolutions in learning technologies to perform an extended validation on the effectiveness and the efficiency of the proposed approach in the science teaching and learning. www.cosmosportal.eu

Research & Development Projects

FP7 – R4SME's Projects as an SME

- **HEDRAD - Development of novel digital computed radiography technology using high energy radiation for the volumetric examination of large scale components, as an SME**

  The objectives of the HEDRad project are to make a number of technological advances that will take the digital industrial radiography sector into a new era and effectively replace film as the detecting media for the examination of thick section components where out of necessity, high energy radiation has to be used to penetrate the component being tested. The project will be the industrial equivalent of the replacement of film based camera photography with digital cameras for examination of thick section materials. www.hedrad.com

- **TIDAL SENSE - Development of a condition monitoring system for tidal stream generator structures, as an SME**

  The project aims at developing a technique for structural health monitoring of tidal stream generators using long-range guided waves, using novel transducers and array of transducers with long-range ultrasonic capabilities. A new multi-functional and multi-channel hardware for generating and receiving the signals with possibilities for transfer of collected data using wireless communications channels will be developed. Moreover the system will include an advanced software for data visualization and collection, focusing, signal processing, structural noise reduction and data transmission. www.tidalsense.com

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Research & Development Projects

FP7 – R4SME's Projects as an SME

- **TidalSense Demo - SDemonstration of a Condition Monitoring System for Tidal Stream Generators.**

  Tidal currents are being recognized as a resource to be exploited for the sustainable generation of electrical power. The high load factors resulting from the fact that water is 800 times denser than air and the predictable and reliable nature of tides compared with the wind makes tidal energy particularly attractive for electric power generation. Condition monitoring will be key for exploiting it cost- efficiently. "TidalSense Demo" project will suppose the demonstration of the results obtained in TIDALSENSE project, in order to clear the pace of these technologies towards commercial maturity. The original project, TidalSense, aims to deliver a condition monitoring system for tidal stream energy conversion equipment. The new project, TIDALSENSE DEMO will comprise the industrialization of the developed sensors for monitoring elements manufactured using modern composite materials, such as fibre metal laminates, honeycombs, glass or carbon fibre reinforced plastics, the study of their feasibility as condition monitoring equipment in several tidal energy converters (TEC), including different ones to those used as reference for their design, and the sea trials of the system.

Research & Development Projects

FP7 – R4SME's Projects as an RTD Perfomer

- **TRACKBOCS - Tracking and Security System with Built in Energy Generation for Containers**

  The idea is to develop a tracking and security system with energy source and energy generation to be retrofitted in containers to enable tracking and security independently of fixed check point installations and satellite navigation systems. The supply chain will enjoy benefits from lower shrinkage and increased efficiency. The system will meet demands for increased security in the supply chain and provides location information and protection against crimeand increase security against terrorist attacks as it will sense and report tampering attempts before arriving to any crowded place and the container can be halted to reduce potential impacts. www.trackbocs.com

- **PROMOVEO - Independent living for today's society: understanding the elderly and disabled for tomorrows inclusive smart home solution**

  The Promoveo project seeks to produce a prototype for developing existing home automation technology in order to integrate multiple devices and provide a user interface tailored to the needs of the elderly and disabled market. The innovation lies within the advanced adaptive learning capabilities of the system, allowing for input prediction and personalisation of the system according to the user(s) habitual needs and surrounding environment. Furthermore, it is envisaged that the solution will use advanced cognitive processes for interpreting speech input into system action(s) by way of a semantic analysis engine. www.promoveo.pera.com

Research & Development Projects

FP7 – R4SME's Projects as an RTD Perfomer

- **µBGA-A Novel System for the Production of World's First Micro Ball Grid Array (µBGA) Spheres for enabling the EU electronics industry to produce smaller electronic goods.**

  The µBGA's project aims at wider SME companies who are interested in the development of novel production techniques for producing µBGA's of less than 150µm. The µBGA's system is targeted at all electronic product producing SME companies where miniaturization is a major concern. This includes electronics for aerospace, automotive, mobile phones and laptops. This trend of miniaturisation + higher functionality looks set to continue, requiring fundamental advances in device electrical interconnect and mounting technology. Ball Grid Arrays (BGAs) is a key technology that simultaneously addresses the requirements for high density fine feature electrical interconnect and physical attachment of silicon chip devices. www.ubga.eu

- **CreepImage - Development of A Long Term Creep Monitoring Image Based Technique**

  Power stations generally operate well beyond their original design life. This has resulted in frequent (at least annual) failures of superheated steam pipes which result in widespread power cuts and massive financial losses for operators, typically costing €120 M per event. The project aims to develop an optical non-contact, non-intrusive full field strain measurement system which is capable of operation under the harsh conditions in a power plant at temperatures up to 600°C. An innovative method will be employed to reduce image degradation due to time varying refractive index gradients due to thermal convection. Data from these measurements will be used to predict the remaining useful life of high temperature components such as steam pipes and headers in order to reduce the probability of failure via measurement rather than calculation.

Research & Development Projects

FP7 – R4SME's Projects as an RTD Perfomer

- **MoorInspect - Development of an advanced medium range ultrasonic technique for mooring chains inspection in water**

  Moorinspect main objective would be to develop a medium range ultrasonic in-water testing technology using Ultrasonic Guided Waves (UGW) method to identify cracks and fatigues in closed circular/elliptical chains. The Moorinspect main technology objective would be to bring the novel approach to Non Destructive Testing (NDT) moor chain scanning though investigating several types of transducers for MRUT methods including (Electro-Magnetic Acoustic Transducer) EMAT approach to deployment, and hence through Development of Mechanised Deployment Vehicle to inspect those chains, leading to the capacity to conduct periodical inspection to detect progressive defects and fatigues based on historical data gathered from perpetual testing.

- **CranesINSPECT - Continuous Reliable Advanced Novel Efficient Structural Health Monitoring system for crane inspection applications (Coordinators)**

  There is a vital need for systems to continuously monitor the structural health of the cranes. Cranes are of the most common machinery used in industry. Cranes of any type are used for the manipulation of loads, and are installed in industrial plants, construction sites, shipyards, ports, etc. In 2008, there was a reported 401 crane accidents of which 217 accidents were fatal. It is fair to assume that not all accidents are reported. The project will develop an advanced integrated structural health monitoring system to continuously monitor cranes in industrial, logistics, construction, and shipbuilding sites. New and novel Non-Destructive Testing (NDT) techniques and sensor systems are used in order to inspect for structural damage or cracks in the main frame caused from fatigue, distortion, corrosion, etc., and to provide real time information about the condition of the structure. The goal is to reach further than any similar system in existence toward a complete and commercially competitive solution at the end of the project.

Research & Development Projects

FP7 – Science in Society

- **EUROSIS – Networking for SiS NCPs**

  Science in Society is a very wide area and the NCPs have to be very well informed for several research areas concerning their results and their ways to communicate them with the society as they will be responsible to facilitate and consult institutions to do so in the whole European Union and beyond. The aim of the proposed project is to improve the operation of each SiS NCP in order to provide more effective and quality services to organizations in the EU as well as the associated countries. An advanced Knowledge Management tool was developed by iKH as subcontractor in order to facilitate and manage the knowledge in the Science in Society Network. www.eurosis-kmt.eu

- **SCICAFE - Exchanges and co-operation of local actors on scientific culture (Coordinators)**

  The project's main target is to create a European network of Science Cafes in cities of different geographical, demographic and cultural characteristics. The specific mission of this network is the involvement of science in society issues so as to provide local civil society organizations with the scientific knowledge they need. The SciCafe project proposes the notion of networking, exchange of best practices, and co-operation between science cafes in different cities and regions of Europe, both in their physical vicinities and in virtual space. An advanced web based platform was developed in order to incorporate networking, knowledge management and communication tools and avail such in the Science café community. www.scicafe.eu

Research & Development Projects

EUREKA – Eurostars

- **NEMATIC – Novel Miniaturized Surface Mount Technology for Electronics Packaging**

  The Nematic system is targeted at all electronic product producing companies where miniaturisation is a major concern. This includes electronics for aerospace, automotive, mobile phones and laptops. . The small diameter of the solder alloy spheres reduces electrical resistance and capacitance and helps to preserve electrical signal integrity. BGA technology facilitates a reduction in the silicon chip package size, better heat dissipation, and greater module (circuit) densitiesThe use of current BGA technology for UFBGA production leads to poor quality product batches. Therefore, current manufacturing processes are commercially not viable due to high production costs resulting from low yields and the consequent wastage of material. Project aims are to prove technical feasibility of producing UFBGA spheres via a commercially viable process

Ambient Assisted Living

- **EASYREACH - Fostering social interactions of home-bound and less educated elderly people.**

  The proposed project is an innovative and sustainable ICT solution to allow elderly and less educated people to participate in the benefits of IT-based social interactions. The project will build a system, called *EasyReach, that supports many styles of social interaction between users.*

Research & Development Projects

National Funded Projects

- **PMAINT (Pervasive Maintenance) - Flexible System on distance Diagnostic Services of Industrial Equipment with the use of Wireless Communications**

  The project involves industrial research for the exploitation of new technologies and existing know-how for the development of a system on distance Diagnostic Services for maintenance of Industrial Equipment.

- **ASKLIPIOS: 3D representations of archaeological sites of Asklipieion and virtual reality of their operation**

  The project involves a study of archaeological sites of ancient Asklipieion, their findings, and the written sources describing their operation. In addition, a well defined and integrated system for recording of their location, the way of their operation and exercise of medicine will be developed. In the framework of the project, an integrated system for presentation of excavations will be also be developed. The system will provide the representation of the main worship centres of doctor Asklipios.

Research & Development Projects

National Funded Projects

- **DIANOEMA: Optical Analysis and Gesture Recognition for Modelling of Notional Language and Application in Robot Remote Controlling**

  Objective of the project is the development of innovative algorithms for picture analysis and sight calculation for the effective optical analysis of video sequences, aiming at detection and monitoring of gestures, the parallel collection of “text” video corpus of Greek Notional Language and annotation and modelling of indicative subsets, the automatic recognition of indicative gestures of Greek Notional Language with specific meaning, using automatic systems of sight calculation, and the completion of the above in a system of pilot application robot remote controlling with a subset of simple gestures.

- **SPONTANEOUS - Spontaneous Speech Recognition**

  The project aims at the recognition and transcribing of natural speech based on applications of TV and radio reporters' speeches, with the development of advanced speech recognition algorithms and software applications.

R&D 2011Portfolio

Science in Society

eContent+

R4SME'(SMEAG)s

Technology Enhanced Learning

NDT, Sensors & Electronics, Image Processing, Quality Monitoring

Advanced Knowledge Management

Embedded SW Engineering,Man – Machine Interface

Visualization & Imaging Techniques

Mobility & Sustainability

SECURITY & ICT

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