

# ILLUMINE Consulting Services

<http://www.illumine.gr>

*“Serving IT with Excellency”*

**Business Domains** ILLUMINE's comprehensive product portfolio innovatively addresses three primary domains

- Software & Web Business
- Telecommunications
- IT Infrastructure

**Corporate Objectives** **Customers**  
Add value to our customers by offering high quality products and services. Boost their business by resolving cases and increasing productivity

## Corporate Development

Develop continuously via speculating new markets and trends and via investing on our people.

**Corporate Values Identity** **Integrity**  
We are open and honest in our business.

## Trust

We develop strong relations with our customers based on mutual trust.

## Passion

We listen to our customer's needs and we offer them best in class solutions.

## Flexibility

We understand quickly our customer's business model and adapt accordingly our solutions.

## Team Spirit

We work very close with our customers, ensuring great collaboration and contributing this way to the operational success.

## Business Domains of Offered Services

ILLUMINE offers expertise and consulting in the following business domains:

- **Telecommunications**
- Billing Systems
- Data Conversions and Migrations.
- Custom Reporting Applications.
- Network Management and Provisioning:
- Soft Mediation Devices
- Fraud Management
- Revenue Loss
- Network Traffic Testing
- VoIP and POTS telephony exchanges
- Telephony Applications
- **IT Infrastructure Solutions & Storage**
- Virtualization Solutions | VMware | Redhat
- Servers, PCs and subsidiary devices
- SAN | NAS | DAS storage solution
- Backup Solutions
- System Software
- Wired and Wireless Networks
- Local Area Network / Wide Area Network
- Network Security (Firewalls, VPN, IDS, IPS, PKI, Antivirus)
- Network Administration
- **Software Development & Enterprise Business**
- Custom N -Tier Enterprise applications
- Cloud Enterprise Solutions
- Database Design – Implementation – Performance Tuning
- Application Server Tuning
- Mobility Planning – Mobile Applications
- Thin Client Embedded Applications
- Real – time Embedded Systems from Chipset Planning to Application Design and implementation.

## Company Services

ILLUMINE offers the following directions of services:

- **Development Outsourcing.** At ILLUMINE, we deploy cutting edge technology in order to deliver innovative solutions that benefit your business with augmented productivity. We design realistic solutions in respect with your resources. Preferring the outsourcing solution saves your business the cost of building and preserving the development's infrastructure and also human resources providing this way a cost optimum solution. Our services cover the overall project's life cycle.
- **Engineering Consulting.** It is our company's policy to provide only experienced consultants that undertake projects with a "willing to win" effort. This is the key to success. ILLUMINE provides consultants capable to track a project at all phases and collaborate with your development team in an effective way. We deliver our services as long as needed and finally we provide a technology transfer plan that ensures technical knowledge transfer to your team.
- **Custom Software Solutions.** In case your company needs to build custom applications, ILLUMINE can provide the software experts to implement them. All our S/W engineers have long experience in S/W industry and hold postgraduate degrees. Strictly having one vision entitled "product perfection", you can build not only a support agreement, but also a strong cooperation.
- **IT Solutions.** We have deep expertise in planning and execution of IT integrated solution for companies and organizations. Our team will design, implement and deliver the proposed solution from the Physical layer up to the Application Layer like SLA Monitoring and NMS applications. Offered IT solutions cover all the architectural levels, ranging from: Network Design Hardware planning for Server and Storage Software design for Virtualization and Operating Systems
- **Technical Support.** ILLUMINE provides experienced engineers that can monitor and support your infrastructure. We offer flexible support contracts that you can choose and discuss regarding the orientation of the offered services, always tailor made to your needs.
- **Training.** ILLUMINE provides fully experienced trainers that have prior working experience in software development industry and also have been involved in professional and academic training. All our trainers are experienced and active Consultants offering consulting services worldwide

## Operational Roles we take

Cooperating with us ensures a professional relation that will deliver all those it promises. The roles we can take are:

- **Operational planning** The organizational planning of a project to the point it reaches the design phase. Operational Planning ensures that the project is feasible, it denotes the weaknesses and potential problems and makes a first estimation on demanded resources and time plan. What we actually do is translating your business case to a well formed technical solution. The compilation of Operational Planning delivers the Functional Specifications, and Feasibility Study.
- **Technical Design** The compilation of the project's tactical and technical design. Given the Functional Specifications, ILLUMINE can deliver your project's design folder containing the Project's Architectural (high level) Design, the Subsystems detailed design a non functional prototype to ensure that the designed system will cover 100% your needs and finally an accurate estimation of the project's time plan.
- **Re Design/ Re – implementation** in case your organization already owns an outdated infrastructure, ILLUMINE can redesign it, completing its existing functionality with what you may have gained from your user experience. The new design will fulfill the functional specifications of your prior system with an underneath cutting edge technology.
- **Engineering Implementation** the implementation of a designed project. In this case, ILLUMINE will study the solution provided by your solution architect and may add some comments upon implementation. In the next step, ILLUMINE will deliver an accurate and integrated implementation of the solution along with the detailed design documentation.
- **Engineering Auditor Consulting** ILLUMINE can monitor all phases of a project 's implementation, preventing potential problems towards a successful delivery. ILLUMINE will ensure that all functional specifications and requirements will be delivered according to the plan, eliminating problems like missing specifications, bad design, performance lack and integration problems.
- **Training** we deliver professional training for TELECOMS, LINUX, JAVA, UML and IT Project Documentation subjects on the following basis:
  - Standard training syllabus.
  - Tailor made training syllabus.

## Technologies Used

Our mission is to provide your business with reliable, flexible and low-cost solutions.

- We work with passion
- We adapt the problem fast, present to your team all possible solutions and suggest the best one.
- We implement the solution and deliver always in time, even if they are in tight schedules.

ILLUMINE mainly utilizes the following technologies according to project's case:



<b>Telecommunications Systems</b>	Prepaid: Logica Aethos, SIEMENS ADMOSS Billing: ATOS ORIGIN BSCS, Geneva, Metratech Metranet, HP IUM IN/NGIN: JAIN SLEE, HP OpenCall Provisioning: ActionStreamer, ServiceWeaver, Axioss, Any TR-69 Compatible Fraud: HP FMS
<b>Telecommunications Technologies</b>	Fixed Line Call Protocols: SS7,SIP, Diameter, Radius Fixed Line Technologies: DSL, ADSL, ADSLplus, VDSL Mobile: GSM, CDMA, 3G
<b>Business Frameworks</b>	Content Management System: Joomla, Drupal Document Management System: Alfresco, OpenKM, Nuxeo
<b>OSS / IT Infrastructure - DevOps</b>	Continuous Delivery: Opscode Chef - Ruby Agile: Atlassian Bamboo , JIRA, Redmine, Git Tools: HP NNM, HP OpenView, Nagios, OpenSNMP, Hyperic, Splunk, MONyog, CA Wily Introscope
<b>Application Development</b>	C/C++, Java, C#, Ruby, Unix Shell, Powerscript
<b>Enterprise Application Development</b>	J2EE, .NET, CORBA, COM/DCOM
<b>Enterprise Application Servers</b>	Tomcat, JBOSS, WebSphere, WebLogic, Tomcat
<b>Database</b>	ORACLE Server, PostgreSQL, MySQL, MariaDB BigData: Hadoop, MongoDB
<b>Operating Systems</b>	Linux (RHN, Fedora, SuSe), HP-UX, AIX, Solaris MS Windows

## Methodology

ILLUMINE uses a client-centric approach to all customers. We provide a correct and proven treatment to your case study according to your business needs. The software project management we are using is based on the following phases:

- **Business Modelling - Requirements Analysis:** we work aside. Your team describes your business process while we derive the use cases, the data flows and functional areas of the requested system. The outcome of this process is to define a well – formed document that describes the fingerprint of the desired system: It perfectly defines how this system will function.
- **Feasibility Study:** We explain some implementation scenarios helping you to refine your concept into a realistic scenario and us to find out if the proposed scenario finally fits your business.
- **Planning Phase:** Define the steps to be completed on-time and in respect of the resources
- **Design Phase:** we perform system analysis based on the previous steps and we compile the High Level Analysis Document that describes the logic (flows and algorithms), the architecture and implementing technology stack of the system.
- **Implementation Phase:** We implementing the project by following the Design aspects and the Requirements Analysis. Towards this phase, all software components that compose the system are tested independently, ensuring error-free components.
- **Integration Phase:** At this phase the basic sub systems are bound together to build the overall system. During the Integration Phase we perform interface Compliance Tests to ensure the correct collaboration among external and internal subsystems
- **QA Phase:** We test the overall system as a "black box". We perform a to z specification cross checking by creating test scenarios and perform overall functional system check. We then continue with System Performance Test by measuring the system response times for several load cases. According to the test findings, we tune the system by adjusting its configuration. The outcome of this phase is the Factory and Acceptance Test Document.
- **Maintenance Phase:** for a given period, aside with you, we observe the system and document known issues. We create the Run Agile Board (JIRA or Redmine) and keep track of incidents and projects change management. We produce the system documentation, training your people and we ensure knowledge transfer to your team.

## Customers

<p>HP HELLAS Ltd www.hp.com</p>	
<p>OTE S.A. www.ote.gr</p>	
<p>Hellas On Line S.A www.hol.gr</p>	
<p>Intracom-Telecom S.A. www.intracom-telecom.com</p>	
<p>WIND S.A. www.wind.com.gr</p>	
<p>On Telecoms S.A. www.ontelecoms.gr</p>	
<p>Hellenic Ministry of Economics MOU S.A.</p>	
<p>GFOSS S.A. www.ellak.gr</p>	
<p>SIEMENS Enterprise S.A. www.siemens-enterprise.com</p>	
<p>SPACE HELLAS S.A. www.space.gr</p>	
<p>Vodafone Hellas S.A.</p>	
<p>Neuropublic S.A. www.neuropublic.gr</p>	
<p>Yuboto Ltd. www.yuboto.com</p>	
<p>IMC e-services ΕΠΕ. www.imc.com.gr</p>	

TELESMA S.A.  
www.telesmabt.gr



Neurosoft S.A.  
www.neurosoft.gr



FOOD Plus S.A.  
www.pizzahut.gr



ASTROFOS Ltd  
www.astrofos.com



UNITYFOUR S.A.  
www.unityfour.eu



PTLEGAL S.A.  
www.ptlegal.eu

PISTIOLIS - TRIANTAFYLLOS & ASSOCIATES LAW FIRM

INOX STEEL TECHNICAL Ptn.  
www.inoxst.com



Telework Ltd  
www.telework.co.uk



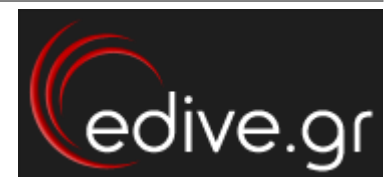
Hippokratis S.A.I.C.  
www.hippokratis.com



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www.magnakat.com



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## Telecommunications

ILLUMINE was involved in a wide range of software projects, many of them related with telecommunications. It was a long but challenging way in the modern software industry until we have experienced the following:

- **Billing Systems:** Project dealt with data gathering and extension in order to supply the existing Billing System with error-free, extended CDRs. The ultra fast performance was a critical factor on project's success. In other projects we have also worked with dominant telco billing systems like Geneva, BSCS, Metranet, IUM.
- **Billing Revenue:** project was about calculating the CDR loss during the rating and billing cycle. The proposed solution was based on billing system's log files parsing in order to find out the CDR loss per rating or billing phase. Results were gathered in a dedicated database and in the end of a billing cycle the overall results were recalculated.
- **Roaming applications:**TAP TD.57 CDR pre and post processing, roaming charges and taxes calculation, roaming cost center and quota extraction, CDR transformation and anonymization. We have our own TD.57 asn.1 parsing and translation libraries (C++/Java) that we maintain every time the TD.57 specification changes
- **Messaging Applications:** SMS/MMS: we have implemented applications like SMS-C in J2EE with SMPP 3.4/HTTP/SOAP interfaces for fixed line and mobile operators. Cell Broadcasting: we have implemented a CBC under 3GPP TS 25.419
- **Provisioning and Customer Configuration:** the requested was to implement a WEB based application that could test (Line : Metallic /DSL : SELT/DELT) and change the DSLAM' voice and DSL ports to adjust the user's profile. We worked with platforms like Axiom Axioss, Intracom ActionStreamer and also open source frameworks like JAIN SLEE.
- **Conversions and Migrations:** custom interfacing code for CDR transformations in order to support data flows between systems like flow from Billing to Data Warehousing system. There is almost nothing that we have not already seen so far: ASCII, ans1, XML, Ericsson R8,AXE-10,AXE-810, Nokia DX200, Cirpack, Italtel Softswitch, Asterisk, TAP TD.57,custom binary files..
- **Mediation Devices:** Gathering of any type CDRs from several data flows (MSC CDRs, MPLS, IP traffic, IN Services CDRs). CDRs were identified, merged and integrated in a common mediation format in order to enter the Billing Cycle.
- **Custom Reporting Applications:** Several custom reports for Call Analysis and Call Statistics. We worked with most common used backends like Oracle Server, MySQL, MariaDB, PostgreSQL, but also non - relational datastores/BigData like Hadoop and MongoDB. We also implemented front end sites sometimes custom made using J2EE over JBoss, Tomcat or based on CMS platforms like Joomla, Dupal or even Document Management systems like Alfresco and OpenKM
- **Network Management:** Implemented S/W control agents for reporting the status and provide remote access and control for different types of network elements. Usually those projects involve integration of custom made agents with a mainstream NMS application like Nagios, OpenNMS, HP NNM, HP PI.

- Fraud Detection and Management:** Implemented several types of interfaces for gathering of CDR flows from several sources. Those CDRs were filtered, transformed to a specific format and pushed to the fraud detection management system. Data flows format included TAP ASN1, or exchange specific CDRs. We worked with HP FMS fraud detection platform first with C++ (older version) and later with Java

The table below presents the major telco projects we took part:

Customer	Project
<b>WIND</b> <i>Mobile Operator</i>	Consulting/Engineering support relative with WIND's Data warehouse infrastructure. Consulting/Engineering support relative with WIND's Commissioning System.
<b>VODAFONE</b> <i>Mobile Operator</i>	Consulting/Engineering support for "GATHER" Datawarehouse system Consulting/Engineering support for "IUM" Mediation Device <ul style="list-style-type: none"> <li>Consulting/Engineering support for VDMS Vodafone's Device Management Provisioning</li> </ul>
<b>COSMOTE</b> <i>Mobile Operator</i>	Consulting/Engineering support for FMS Fraud Management System Consulting/Engineering support for UDR Mediation / Consolidation
<b>OTE</b> <i>Land Line</i> <i>Network Operator</i>	Consulting/Engineering support for FMS Fraud Management System Consulting/Engineering support for Billing System Migration from BCCS to Geneva
<b>HOL</b> <i>Land Line</i> <i>Network Operator</i>	Consulting Engineering Services for CURBAS Database performance Northbound Test System I/II provisioning and testing of ADSL2+ circuits for LINE/Selt test.
<b>OnTelecoms</b> <i>Land Line Operator</i>	End to end delivery of Public SMS Service currently offered by OnTelecoms Consulting/Engineering support for company's Provisioning System
<b>Hewlett Packard Hellas</b> <i>Service Provider</i>	<b>FMS:</b> Fraud Management System. Consulting/Engineering Support for all HP FMS installations in Greece. <b>IUM:</b> Internet Universal Mediator. Consulting/Engineering Support for Vodafone's Installation <b>VDMS:</b> Vodafone's Device Management System. Implementation services.
<b>INTRACOM</b> <i>Service Provider</i>	Consulting/Engineering support for Intracom's Intelligent Networks Platform installed at the following operators: Telecom Srbjitsa (SERBIA), Telefonica Dialog (POLAND). Consulting/Engineering support for Intracom's Access System (OTE)
<b>Vodafone Greece</b>	Consulting and implementation services for several telecommunication relevant projects like Vodafone's Device Management System delivered by HP.



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