

Technical Proposal

for the development of Feasibility Study and specific
documentation for implementation of the National Public
Warning System



Republic of Moldova

Nicosia, June 2024

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1. Introduction

1.1 Company Overview

P.G.T. The Magnet Enterprises Ltd (“Subcontractor” or “TheMagnet® or both) has an extensive knowledge in the field of emergency management and public warning systems, with a record of accomplishment of successfully delivered feasibility study and tender documents.

In 2021, the Subcontractor successfully provided expert telecommunications consulting services for the Republic of Cyprus. [TheMagnet®](#) played a crucial role in the feasibility study of a public warning system (PWS), highlighting its capability and expertise. TheMagnet®’s work included:

i. Study and Documentation:

Conducted a thorough study of available early warning population messaging systems within the European Union for mobile phones, focusing on systems that operate without requiring any action from subscribers.

The Cyprus Civil Defense had provided a list of seven (7) PWS vendors to be interviewed independently for all three (3) technologies, namely, Location-based SMS, Cell Broadcast, and hybrid systems.

The 7 PWS vendors introduced to Cyprus Civil Defense by EENA (European Emergency Number Association) were OpenCode, Nokia, Intersec, F24 Group (Gedicom), Genasys, NGSOFT, Everbridge.

Note: During the bidding process we noticed that all Prime Contractors were local telco and/or ICT large companies with all vendors acting as subcontractors and in some cases as consortiums.

ii. Consulting Services:

Advised on the type of system to be selected (Cell Broadcast, Location-Based SMS, hybrid) and provided cost estimation for the selected system.

Offered consultancy on providing the system as a managed service with comprehensive maintenance over a five-year period.

iii. Technical Specifications:

The logo consists of a blue square frame. Inside the frame, the letters 'DS' are positioned at the top right, and 'PT' is written in a stylized, handwritten font below it.

Drafted technical specifications for the system purchase, ensuring they were unbiased and did not favor any specific provider.

Developed other terms of the offer for installation, operation, and maintenance, in compliance with the procurement procedures of the Republic of Cyprus.

iv. Comprehensive Features:

The study and documentation included not only the basic mobile text messaging system (basic modules) but also all additional available features such as integration with social media, interruption of radio-television broadcasts, and integration with siren systems.

TheMagnet® continues to act as the preferred external consultant for the Republic of Cyprus on Public Warning System (PWS) and Next-Generation 112 (NG-112) matters. This experience and expertise directly translate to our current proposal for the Republic of Moldova’s NPWS (National Public Warning System) “Mold-Alert.”

1.2 Purpose of the Technical Proposal

This technical proposal aims to outline our comprehensive approach to developing the Feasibility Study, technical documentation, and tender documentation necessary for the successful implementation of the National Public Warning System (NPWS) “Mold-Alert” in the Republic of Moldova. Our goal is to ensure a robust, efficient, and future-proof system that meets all technical, operational, and regulatory requirements.

2. Project Understanding

2.1 Project Background

For the implementation of the Programme on Prevention and Management of Emergency Situations, approved by Government Decision No. 846/2022, in the light of the Peer Review Report for the Republic of Moldova prepared by the Directorate-General for European Civil Protection and Humanitarian Aid Operations of the European Commission, as well as to ensure the management of hazards at an early stage, the Specifications concerning procurement of services for development of Feasibility Study and specific documentation for implementation of the National Public Warning System are drawn up.



The procurement procedure is conducted within the “Feasibility Study and Specific Documentation for the Implementation of the National Early Warning System” Project (MD-ALERT-STUDY), funded by the European Union.

The subject matter of purchase is procurement of services for development of Feasibility Study and specific documentation for implementation of the National Public Warning System (**hereinafter - NPWS “Mold-Alert”**) and other documents related to the procurement procedure of the NPWS “Mold-Alert” (**hereinafter - documentation**) based on technical feasibility, economic feasibility, operational requirements, national and international legal framework, considering the development trends of technologies over an operational period of at least 5 years from the time of implementation and launch of the NPWS “Mold-Alert” system.

The goal is to obtain the Feasibility Study and specific documentation needed to serve as a basis for the successful implementation in the Republic of Moldova of the NPWS “Mold-Alert” in the event of emergency and exceptional situations, based on mobile communication technologies.

2.2 Objectives

- i. Develop a Feasibility Study for NPWS “Mold-Alert.”
- ii. Create detailed technical documentation for the selected technological solution.
- iii. Prepare comprehensive tender documentation for the procurement and implementation of NPWS “Mold-Alert.”

3. Approach and Methodology

3.1 Feasibility Study Approach

3.1.1 Data Collection and Analysis

- i. Gather data to assess the current situation, the existing systems and protocols and to further evaluate any current emergency management system. The main stakeholders may include, but it is not limited to:
 - a. The General Inspectorate for Emergency Situations of the Ministry of Internal Affairs
 - b. The three (3) Mobile Network Operators (MNOs) [Orange Moldova, Moldcell and Moldtelecom Unité],
 - c. The National Regulatory Agency for Electronic Communications and Information Technology of the Republic of Moldova- [ANRCETI](#),
 - d. The PWS Solution Providers,

The logo consists of the letters 'DS' in a small font above the letters 'PT' in a larger, stylized font, all enclosed within a blue square border.

- e. The Civil Protection and Emergency Situations Service of the Ministry of Internal Affairs of the Republic of Moldova existing population warning infrastructure, and,
 - f. Other relevant stakeholders, such as the Police, the Broadcasting Coordinating Council (Consiliul Coordonator al Audiovizualului- CCA), and the Data Protection Commissioner.
- ii. Conduct a thorough analysis of the legal framework, ensuring compliance with national and EU (European Union) regulations.
 - iii. Examine the MNOs' obligations.
 - iv. Political decisions may need to be taken by the Government of the Republic of Moldova on several matters.

3.1.2 Technical-Economic Solutions

- i. Identify and evaluate at least two viable technological solutions those are Cell broadcast and Location-based SMS, including multiple scenarios for each.
- ii. Provide a comparison matrix of the two technologies, plus the Pros & Cons of each technology.
- iii. Compare technical-economic indicators, performance metrics, and cost-efficiency.
- iv. Evaluate the economic impact, estimating implementation and operational costs over a 5-year period.

3.1.3 Risk Analysis of the Solution

Risk Management is an important aspect of the services to be offered. The proposed solution will undergo a risk analysis process following best risk management practices.

Risks may be identified during the engagement (Feasibility study, technical evaluation, tender documentation). A detailed risk assessment and risk analysis will be conducted based on:

- i. the capabilities and constraints of the proposed solution (advantages and disadvantages)
- ii. the potential implementation risks identified during the initial meetings with the main stakeholders, including the Moldova Government departments, the Mobile Network Operators (MNOs), and the vendors.
- iii. any potential financial risks
- iv. any potential legal risks



A Risk Register will be prepared and updated accordingly. The register will comprise the risk description, its rating according to the likelihood and impact, assigned ownership, proposed mitigation action(s), and a target date for mitigation in agreement with each owner.

Risks that may compromise the deliverables of this engagement will be monitored for treatment by our team. Risks that are a prerequisite to be treated before the implementation of the solution must be monitored and followed up by the Government of the Republic of Moldova main stakeholder.

3.2 Eligibility and Technical Documentation Development

- i. Define Tenderers' eligibility requirements.
- ii. Define detailed technical requirements and system architecture.
- iii. Outline hardware and software components, user interfaces, data flows, and security measures.
- iv. Ensure compatibility and compliance with national standards.

3.3 Tender Documentation Preparation

- i. Develop tender documents in line with the latest World Bank standards.
- ii. Include detailed specifications, evaluation criteria, and procurement guidelines.

4. Work Plan and Timetable

4.1 Work Plans (WP)

WP1: Feasibility Study

Initial discussions and planning.

Data collection and preliminary analysis.

Development of technical-economic solutions.

Finalization and submission of the Feasibility Study.

WP2: Technical Documentation

Detailed technical concept development.

Specification of technical requirements.



Submission of technical documentation.

WP3: Tender Documentation

Drafting of tender documents.

Consultation with stakeholders.

Finalization and submission of tender documentation.

4.2 Proposed Timetable

Here is a timetable for the **120-day timeline**.

WP	Document name	Number of calendar days/% completion of action						
		0-10	20	50	75	90	110	120
1.	Feasibility Study	DP	PC	RC (25 %)	RC (50 %)	RC (75 %)	RC (95 %)	R (100 %)
2.	Technical documentation	DP	PC	RC (25 %)	RC (50 %)	RC (75 %)	RC (95 %)	R (100 %)
3.	Tender documentation	DP	PC	C	RC (25 %)	RC (50 %)	RC (95 %)	R (100 %)

D – Discussion on how to elaborate and concretize the technical task with the presentation of the work plan for the reporting periods;

P – Activity plan drawn up by the Provider and notified to the Beneficiary;

C – Consultations with stakeholders;

R – Report showing the percentage of the documentation executed.

5. Qualification and Experience

5.1 Key Experts of the Project team/CVs

- i. **Ioannis Michaelides – Key Expert 1.** Expert in economic-financial analysis with relevant qualifications and experience.
- ii. **Yiannakis Vakis – Key Expert 2.** Expert in Information and Communication Technology and Managed Services with relevant qualifications and experience.

- iii. **Periklis Theodoridis – Key Expert 3.** Expert in PWS technology solutions and consultation with relevant qualifications and experience.

Refer to attached CVs.

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CV of KEY EXPERT 1**(Expert in economic-financial analysis and in Information and Communication Technology with relevant qualifications and experience)**

- 1. Last Name:** MICHAELIDES
- 2. First Name:** IOANNIS
- 3. Date of Birth:** 11/10/66
- 4. Nationality:** CYPRIOT

5. Education:

<i>Name of Institution</i>	Period of Attendance		Degree / Certificate acquired
	From	To	
Boston University Boston, USA	1990	1991	MSc in Management Information Systems
State University of New York at Albany	1986	1990	BSc in Business Administration & Finance

6. Languages: Mark 1-5 for competence (1 – excellent, 5 – elementary)

Language	Reading	Writing	Speaking
Greek	1	1	1
English	1	1	1

7. Membership of professional bodies:

- a) The Scholastic Honor Society of the State University of New York at Albany.
- b) PECB ISO/IEC 27001 Lead Implementer Certification.

8. Other skills:

- a) **Software Systems Knowledge through specification or implementation:**
 - ERP Systems
 - CRM (Customer Relationship Management Systems)
 - CPQ (Configure Price Quote)
 - Telecommunication protocols including Map, Camel, Diameter, SS7
 - Telecommunications Billing and Revenue Management Systems
 - Business Process Management Systems
 - Management Information Systems / Management Reporting
 - Relational Database Management Systems (Oracle, MS SQL Server, PostgreSQL etc.
 - Document / Workflow Management Systems (Enterprise Content Management)

- Cloud Systems (IaaS, PaaS, SaaS)
- Identity Management Systems
- Financial Systems / Wealth Management
- Retail Sales Management (including various Point of Sale systems & Loyalty systems)
- Hotel & Restaurant Management (PMS)

b) **Other Related Skills:**

- Systems and Software Architecture
- Cloud Native Architecture
- ISO 27001 Certified Lead Implementer
- Mobile networks Design and Implementation
- Analysis and design of customized software
- Process analysis and reengineering
- Process documentation/mapping
- Data migration methodologies

c) **Good knowledge of:**

- Networking Concepts (LAN / WAN)
- Internet – WWW Concepts (e-Mail, Websites, connectivity issues etc.)
- Cloud Infrastructure and Services
- Integration / Interfacing / Interoperability concepts
- APIs

9. **Present position in the organisation:** Senior Advisor in Technology. Head of Data Analytics services.

10. **Key Qualifications:**

- a) **Systems Analysis and Design:** Deep understanding of business requirements, processes, and objectives, with the ability to bridge the gap between management and technical teams.
- b) **TM Fortum:** Expert knowledge in TMFortum eTOM (Business Process Framework), TAM (Application Framework) and SID (Information framework) as well as Digital Maturity Model, and API Framework
- c) **BSS/OSS:** Expertise in Oracle cloud native billing application implementation, contributing unique insights into future developments in the field.
- d) **Customer Relationship Management systems:** Design and Implementation of Salesforce CRM, CPQ, Service and Field Service Modules.
- e) **Voice over IP and IP Multimedia Systems:** Pioneering implementations of SIP protocols and successful deployment of carrier-grade VoIP systems.
- f) **Mobile Network Design and Implementation:** Experienced in SS7 and IP network design using Map, Camel, Diameter protocols, and GSM protocols. Proficient with HLS-HSS, Online billing, roaming, and other applications.
- g) **Database Systems:** Deep knowledge of Relational Database Management Systems such as Oracle, MS SQL Server, PostgreSQL, MySQL including replication and disaster recovery.

- h) **Other Qualifications:** Deep knowledge of business intelligence systems, DWH architecture, project management methodologies, programming languages, virtualization, cloud technologies, and Kubernetes architecture.

11. Professional Experience:

Company / Organisation	Period		Position	Description of Duties
	From	To		
P.G.T. The Magnet Enterprises Ltd	AUG 2022	Present	Senior Advisor	Consulting services in Technology.
Cablenet Communication Systems Plc	DEC 2021	JUN 2022	Chief Advisor Information Systems	Advised both Cablenet Communication Systems PLC in Cyprus and GO PLC in Malta on all aspects of information systems specialty. Facilitated GO PLC in achieving the same Digital Transformation Strategy for Information Systems achieved for Cablenet. Research and advisory services for IS projects, system architecture, process analysis and design, and business intelligence.
Cablenet Communication Systems Plc	DEC 2019	NOV 2021	CIO	Defined and implemented Digital Transformation Strategy for Information Systems. Contributed to overall strategic planning and creation of new mobile and fixed services. Led the Software Development and MIS Departments. Designed and implemented the Oracle Billing & Revenue Management system, Salesforce CRM, and Customer Engagement Portal, representing the bulk of Digital Transformation.
Cablenet Communication Systems Plc	MAR 2016	NOV 2019	MIS MANAGER	Managed Information Systems, process design, systems analysis, and design. Implemented Business Intelligence system, ticketing system, Document Management System, HMC system, and other systems. Developed Intelligent Process Management System for end-to-end digital transformation.
Cablenet Communication Systems Plc	SEP 2013	FEB 2016	MOBILE TECHNICAL MANAGER	Designed, executed, managed, supported, and maintained the entire Cablenet Mobile Network. Developed BSS/OSS processes, implemented Oracle IMS for VoLTE and VoWiFi, and executed Roaming Network with Telecom Italia Sparkle.
DY. Worldnet Ltd / LEMONTEL LTD	JUN 1998	AUG 2013	CEO, ENTREPRENEUR	Designed and implemented a new mobile network, recognized for best practices by Virgin Media Group. The

				company was acquired by Cablenet in July 2013.
ACHILLEAS MICHAELIDES & SONS LTD	JUN 1992	DEC 2004	CIO	Managed Information Systems, process design, data analysis, and operations.
INTERCOLLEGE	AYG 1991	MAY 1992	Lecturer in Systems Analysis & Design and Programming	Taught Systems Analysis & Design and Programming for ACCA.

12. List of Successful Projects:

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/ Duties
Expert evaluator for the Digital Upgrade Plan of Businesses by the Ministry of Energy, Commerce, and Industry	01/06/2023 – Present	Total Plan Cost €30 million	Ministry of Energy, Commerce, and Industry, Republic of Cyprus	Evaluation for selected processes of proposal evaluation for the Digital Upgrade Plan of Businesses.	Project includes analysis and evaluation of business proposals, approval or rejection based on criteria and guidelines of the Ministry.
Case Management System for Department of Labor Inspection	01/06/2023 – 01/12/2023	€ 1.6 million	Department of Labor Inspection, Republic of Cyprus	Preparation of relevant study and tender documents for the development, installation, and operation of a new IT system in the Department of Labor Inspection	Requirements analysis, System Design, and preparation of Tender Documents for Case Management System to process applications and notifications related to labor inspection case division. The application was designed as a Cloud-Native application considering the design requirements of the Digital Factory and other government bodies and includes Work-Flow-Management, Document Management including case management, approvals, and evaluations of the relevant applications.
Integrated Revenue Management System	14/02/2020-09/04/2021	€ 2 million	Cablenet Communication Systems Plc	Billing, Ordering, and revenue management System	Part of the Digital Strategy and Transformation, the implementation of a state-of-the-art e-billing, order and service management system, and SOA integration level system for implementation at Cablenet, competing with larger

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/ Duties
					and more established providers in the telecommunications sector and especially mobile. The infrastructure represents the first global billing application with Oracle's Cloud-Native system, based on Kubernetes. The second phase involving the implementation of the policy portal (PCRF) and migration of fixed services is still in progress.
Customer Relationship Management (CRM) by Salesforce	19/08/2020-Present	€ 3.9 million	Cablenet Communication Systems Plc	CRM, CPQ, Service, field service	Implementation of the latest cloud-based Salesforce CRM technology, order taking system, Field Service system and Customer Service System. A complete application that will improve the end-to-end customer experience. The project requires substantial business redesign Processes, Work-Flow management, data integration, validation, and migration.
Customer Engagement Digital Transformation	19/08/2020-20/01/22	€ 189,000	Cablenet Communication Systems Plc	Customer Self Service Portal	Designed and implemented the customer service portal to support current channels (mobile app and web) and any future channels that may be needed. The idea of the project is to be built once and deploy. It is based on Facebook's React and React Native framework. Many other components are used to build this ecosystem including Google Firebase, Oracle Content & Experience Cloud, Oracle Cloud, API (Application Programming Interface) Gateways and Kubernetes microservices. The implementation will provide customers with self-service capabilities and represents a future investment for the organization.
Human Capital	04/02/2019-30/06/2019	€ 120,000	Cablenet Communication	HCM System	Evaluation, procurement, and implementation of HCM

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/Duties
Management HCM by SAP			on Systems Plc		systems to implement KPIs, Learning, Career Development, license management and intranet portal and employee evaluation. The project was implemented using the SAP Success Factors System in coordination with HR.
Business Intelligence System	30/06/2015-30/11/2016	€ 120,000	Cablenet Communication Systems Plc	Business Intelligence System by SAS and Microsoft	Design and implementation of Business Intelligence System for management decision support, KPI monitoring, provision of comprehensive reports and dashboards, alerts, and revenue assurance operations support. The project was implemented using Microsoft's SAS BI System and Power BI and followed its entire life cycle related to Business Intelligence, from the creation of ETL to the extraction and creation of the staging and database (data warehouse), to the reports and the dashboards required for all business functions.
Intelligent Process Management System (iBPMS)	01/12/2016-06/30/2022	€ 100,000	Cablenet Communication Systems Plc	Intelligent Process Management System	The project concerned the transformation of all business processes – Business Process Workflow. Existing processes were mapped, redesigned, and optimized based on the evolved business process framework (eTOM). The implementation and digitization were performed using Bizagi iBPMS (Integrated Business Process Management System, a new generation of BPM software that formed the basis of the digital transformation of organizations.

13. Other related data/information:

Over 30 years of experience in IT and consulting services, with roles including Chief Information Officer (CIO) and leading development teams for project implementation,

primarily in telecommunications sectors such as Mobile Platform, Billing Platform, IMS Volte Platform, Business Intelligence Platform, OSS/BSS Platform, and more.

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CV of KEY EXPERT 2

(Expert in Information and Communication Technology and Managed Services with relevant qualifications and experience)

1. **Last name:** VAKIS
2. **First name:** YIANNAKIS
3. **Date of birth:** 09/08/1962
4. **Nationality:** CYPRIOT

5. Education:

Name of Institution	Period of Attendance		Degree / Certificate acquired
	From	To	
University of Manchester Institute of Science and Technology (UMIST)	9/1982	6/1985	B.Sc. in Mechanical Engineering
Cranfield Institute of Technology	9/1985	9/1986	M.Sc. in Software Techniques for Computer-Aided Engineering

6. Languages: Mark 1-5 for competence (1 – excellent, 5 – elementary)

Language	Reading	Writing	Speaking
Greek	1	1	1
English	1	1	1

7. Membership of professional bodies:

- a. PECB ISO/IEC 27001 Lead Implementer Certification (Certificate Number: ISLI1149571-2024-04)
- b. Cyprus Computer Society (ccs.org.cy)

8. Other skills:

a. Software Systems knowledge of concepts through business analysis, requirements definition & project management services:

- VMWare Server Virtualization
- Enterprise Storage Management
- Oracle and MS-SQL High Availability
- Document / Workflow Management Systems (Enterprise Content Management)
- IBM Backup Solutions (ESS / Tivoli Storage Manager)
- RCMS Risk Management Reporting (as a user)



b. Other skills:

- Program and Project Management and Service Delivery
- Financial Management, budgeting, and spending
- Analysis, design, and implementation of infrastructure architecture
- Data Centers – Active-Active Architecture
- Business Continuity and Disaster Recovery planning and implementation
- Policies and procedures: analysis, recording, and redesign
- Implementation of Information Security Management System
- Information Security: Analysis, implementation of technological and procedural solutions
- Risk Management
- Systems and Data migration
- Performance and Stress Testing
- Management and Negotiation of Managed Services Contracts (Outsourcing)
- Vendor Management
- Service Level Management, Agreements and Penalties
- Key Performance Indicators (KPIs)
- Incident Management
- Administration and Governance Frameworks
- Executive Reporting and Management Dashboards

c. Good knowledge of the following:

- Infrastructure Concepts: Systems software, Operating systems (Windows, Linux, IBM AIX, IBMi), Hardware (IBM, HP)
- Infrastructure Architecture and Automation
- Server Virtualization (VMWare)
- Enterprise Storage (IBM SVC, IBM DS, NetApp Metrocluster)
- Cloud Architecture (Internal vs Hybrid, IaaS (Infrastructure as a Service), PaaS (Platform as a Service), SaaS, SECaaS)
- Information Security Concepts (ISMS (Information Security Management System), Policies, SOC)
- Networking Concepts (LAN / WAN)
- Firewall Concepts (Internal / External DMZ, 3-Tier Architecture)
- Backup Solutions (TSM, VEEAM, Cristie, Docave)
- Core Networking and Branch Network (CISCO)
- Load Balancers (F5)
- Firewalls (Check Point)
- DDoS (F5)
- Desktop Virtualization / VDI (Citrix)
- RedHat OpenShift Cloud Private (OCP)
- Database Systems (Oracle Exadata, MS-SQL, DB2)
- Middleware (IBM ACE, IBM MQ)

d. Office Automation Packages:

- Exceptionally good knowledge and use of MS-Office 365 (Teams, SharePoint, Word, Excel, PowerPoint)
- Good knowledge and use of MS-Project, MS-Visio



9. Present position in the organisation: Senior Advisor Technology Infrastructure at TheMagnet®.

10. Key qualifications:

As the Manager Technology Infrastructure and Managed Services Governance Operations at the Bank of Cyprus, I have acquired the following skills and qualifications:

- a. Deep knowledge in Infrastructure Technology and Architecture, focusing on the high availability of systems (24/7) by implementing the Active-Active Data Center design.
- b. Implementation of short- and long-term strategy, in line with the bank's strategy for Digital Transformation and Cloud adoption.
- c. Program and Project Management. Design, coordination, prioritization, and execution of multiple projects. Project planning, assign responsibilities, set and follow-up milestones and deadlines, set escalation points for effective prioritisation, and involve stakeholders through committees to report progress and resolve issues.
- d. Contract negotiation skills. Specialization in IT contracts, focusing on Service Levels, penalties, financial terms, renewal, and termination (contract lifecycle), legal and regulatory obligations. Establishment of contract governance, executive reporting.
- e. High awareness in Operational risks and Information Security risks. Risk self-assessments stemming from internal or external audits, planning and execution of mitigation actions, reporting to management.
- f. Preparation of the annual budget, approval of budget expenditures, submission of forecasting reports to the management. Extensive knowledge of procurement framework and processes.
- g. Systems analysis and process and software design: Deep understanding of requirements based on business goals, ability to act as a bridge between management and technical teams.

11. Professional experience:

Company / Organisation	Period		Position	Description of Duties
	From	To		
P.G.T. The Magnet Enterprises Ltd	MAR 2024	Present	Senior Advisor - Technology Infrastructure	Consulting Services in Technology Infrastructure and Managed Services engagements. Implementation of Information Security Management Systems.
Bank of Cyprus Information Technology Services	NOV 2022	DEC 2023	Manager Managed Services Governance Operations	Management of Managed Services Outsourcing Contracts, Program and Project Management, Service Delivery, Service Levels Management, Financial Management, Executive Reporting.

Bank of Cyprus Information Technology Services	AUG 2014	NOV 2022	Manager Technology Infrastructure	Management of the Infrastructure Department. Planning and strategy of the department. Organization, planning, and implementation of programs and projects. Improvement and redesign of processes for smooth delivery of department services, with emphasis on automation and incident and problem management. Preparation of the annual budget, approval of expenditures, submission of forecasting reports to management.
Bank of Cyprus Information Technology Services	JAN 2006	AUG 2014	Group Head Storage and Database Administration	Management of Storage and Database Administration teams. Design and implementation of solutions for Open Systems Storage, Oracle Real Application Cluster. Management of the Data Center and implementation of Disaster Recovery Planning.
Bank of Cyprus Information Technology Services	JAN 2001	JAN 2006	Chief Systems Programmer	Member of the Infrastructure Systems team. Specialization in IBM Mainframe systems, Enterprise Storage, Enterprise Printing.
Bank of Cyprus Information Technology Services	AUG 1988	JAN 2001	Senior Systems Programmer	Member of the Infrastructure Systems team. Specialization in IBM Mainframe systems, Enterprise Storage. Software and operating system programming. Responsible for training new employees in the IT department.
VICAM Computersysteme GmbH, Vienna	SEP 1986	MAY 1988	Analyst / Programmer	Software Analyst and Programmer for 3D modelling and digitization of 3D objects.

12. List of Successful Projects

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/ Duties
Managed Services Engagement	2017 – 2027	~€70 million	Bank of Cyprus	Enter an agreement with third party vendor in a multi-year multi-million Managed Services engagement. The agreement's scope was multi-faceted, which included a co-sourcing model, managed contracts, technology refresh, support of the active-active architecture,	Responsible to make a multi-year agreement with third party vendor for Managed Services outsourcing. A pre-requisite was to re-organize Infrastructure department's operating model to align with the contractual obligations of

				and implementation of a series of projects (referred to as a program), as described hereafter.	Managed Services vendor. Other responsibilities were the legal review of the contract, and regulatory requirements such as confidentiality and non-disclosure agreements, outsourcing evaluations, data processing agreement, single resolution board assessments, etc.
Server Virtualization VMWare (Managed Services Engagement)	2017 – 2018	~€1,0M million	Bank of Cyprus	Upgrade VMWare cluster infrastructure to support virtualization of Windows and Linux virtual servers.	Program Executive between the Bank and the vendor, and project sponsor for the Systems and Virtualization team.
CISCO IP Telephony (Managed Services Engagement)	2018 – 2020	~€3M million	Bank of Cyprus	Implement CISCO IP Telephony throughout the organization, including Call Centers, Call Recording solutions.	Program Executive between the Bank and the vendor, and project sponsor for the Network and Telephony team.
OpenShift Cloud Private (Managed Services Engagement)	2020 – 2022	~€4M million	Bank of Cyprus	Implement RedHat OpenShift solution for the Bank's private Cloud.	Program Executive between the Bank and the vendor, and project sponsor for the Middleware team.
Citrix VDI Desktop Virtualization (Managed Services Engagement)	2019 – 2020	~€1,5M million	Bank of Cyprus	Implement Citrix Virtual Desktop solution (VDI). Implementing in parallel StratoDesk NoTouch OS the Bank saved hundreds of thousand euro by repurposing old PCs.	Program Executive between the Bank and the vendor, and project sponsor for the Systems and Virtualization team.
F5 Load Balancing (Managed Services Engagement)	2019 – 2020	~€1,5M million	Bank of Cyprus	Implement F5 Load Balancing technology to distribute network load for applications.	Program Executive between the Bank and the vendor, and project sponsor for the Network and Security team.
F5 DDoS (Managed Services Engagement)	2020 – 2021	~€1M million	Bank of Cyprus	Implement F5 DDoS module to protect the network from DoS attacks.	Program Executive between the Bank and the vendor, and project sponsor for the Security Operations team.
F5 Web Application Firewall	2020 – 2021	~€1M million	Bank of Cyprus	Implement F5 WAF (Web Application Firewall) module to	Program Executive between the Bank and the vendor, and project

(Managed Services Engagement)				protect applications from malicious attacks.	sponsor for the Security Operations team.
F5 SAFE (Managed Services Engagement)	2019 – 2021	~€3M million	Bank of Cyprus	Implement F5 SAFE (WebSafe and MobileSafe) to protect the organization's Web Banking and Mobile Banking applications.	Program Executive between the Bank and the vendor, and project sponsor for the Security Operations team.
IBM ESS Backup Solution (Managed Services Engagement)	2020 – 2022	~€2M million	Bank of Cyprus	Implement IBM ESS appliances combined with TSM solution to backup data in accordance with Information Security data retention policies.	Program Executive between the Bank and the vendor, and project sponsor for the Storage and Backup team.
Active-Active Data Centers	2015 – 2018	~€15M million	Bank of Cyprus	Transform the architecture of the Bank's two Data Centers from an Active-Passive configuration to Active-Active. To achieve this a series of projects were initiated, as described hereafter.	Worked jointly with external vendors to design the architecture and verify the design. Then acted as a sponsor for the implementation of the Active-Active architecture, under my capacity as Technology Infrastructure Manager.
Core Network (Active-Active Data Centers)	2015 – 2016	~€1M million	Bank of Cyprus	Implementation of Core Network Architecture to support Data Center Active-Active configuration.	Project sponsor for the Infrastructure Network Security team.
Core Firewalls (Active-Active Data Centers)	2016 – 2017	~€1M million	Bank of Cyprus	Implementation of Core Firewalls Architecture to support Data Center Active-Active configuration.	Project sponsor for the Infrastructure Network Security team.
Enterprise Storage (Active-Active Data Centers)	2016 – 2018	~€8M million	Bank of Cyprus	Implementation of Enterprise Storage Architecture to support Data Center Active-Active configuration. Solutions implemented: IBM DS, IBM SVC, NetApp MetroCluster.	Project sponsor for the Infrastructure Storage team.



Server Virtualization (Active-Active Data Centers)	2015 – 2018	~€3M million	Bank of Cyprus	Implementation of VMWare Virtualization platform to support Data Center Active-Active configuration.	Project sponsor for the Infrastructure Systems team.
Fibre Connectivity (Active-Active Data Centers)	2015 – 2018	~€0,6M million	Bank of Cyprus	Implementation of fibre connectivity between the two Data Centers to support Active-Active configuration. Solution integrated both LAN and SAN design, involving two vendors for redundancy purposes.	Project sponsor for the Infrastructure Network Security and Storage teams.
Oracle & SQL (Active-Active Data Centers)	2016 – 2018	~€1,5M million	Bank of Cyprus	Implementation of Oracle Exadata and SQL Always-On architecture to support Data Center Active-Active configuration.	Project sponsor for the Infrastructure DBA team.

13. Other related data/information:

Proven experience in IT Management based on a career that spans more than thirty-seven years. I worked at the Bank of Cyprus and specialized in Technology Infrastructure, holding various positions, the last seventeen years at management level.

Skills, abilities, and practices in analysis and problem solving, combined with decisiveness, collaboration, and leadership skills, helped me advance to managerial positions. I was appointed Manager Technology Infrastructure in 2014 after the merger of the Bank of Cyprus and Laiki Bank, playing a crucial role in the systems integration of the two banks.

I have gained specialized experience in Managed Services contracts with external partners. Deep and high-level knowledge in Information Security, Risk Management, mitigation of risks, solution implementation, and ISMS system implementation.



CV of KEY EXPERT 3**(Expert in PWS technology solutions and consultation with relevant qualifications and experience)**

1. **Last Name:** THEODORIDIS
 2. **First Name:** PERIKLIS
 3. **Date of Birth:** 4/4/1970
 4. **Nationality:** CYPRIOT

5. Education:

Name of Institution	Period of Attendance		Degree / Certificate acquired
	From	To	
Institute of Directors (IoD) London, UK	2014	2014	Diploma in Company Direction (Dip IoD)
Institute of Directors (IoD) London, UK	2012	2012	Certificate in Company Direction (Cert IoD)
The University of Texas at San Antonio (UTSA) San Antonio, Texas, USA	1992	1995	BSc Electrical Engineering
Higher Technical Institute (HTI), Nicosia, Cyprus	1987	1990	Diploma of Technician Engineer in Electrical Engineering

6. Languages: Mark 1-5 for competence (1 – excellent, 5 – elementary)

Language	Reading	Writing	Speaking
Greek	1	1	1
English	1	1	1

7. Membership of Professional Bodies:

- Member of the Cyprus Scientific Technical Chamber, Electronics Engineering
- Past Member of the Industry Advisory Board of European University of Cyprus (EUC)
- Member of the Cyprus Electrical and Electronics Engineers Association
- Member of the Cyprus Professional Engineers Association
- Member of the European Federation of National Engineering Associations

8. Other Skills (Certifications):

- PECB ISO/IEC 27001 Lead Implementer Certification
- Certified European Engineer (EUR-ING)



- c) Certificate in Company Direction (Cert IoD)
- d) Full-time Student Honor Roll (UTSA)

9. Present position in the organisation:

- a) Chief Executive Officer at TheMagnet®
- b) Senior Sales Consultant Cyprus & Malta at Phoenix Tower International
- c) Business Development Director at SysteCom Ltd
- d) Board Member at the American Chamber of Commerce Cyprus (AmCham Cyprus)
- e) Board Member at the Cyprus Information Technology Enterprises Association (CITEA)
- f) Board Member at the Cyprus – Malta Business Association
- g) District Lt Governor) and Board Member at the American Hellenic Educational Progressive Association (AHEPA) Cyprus District

10. Key Qualifications:

- a) Telecommunications, Digital Communications
- b) Information technology, Cybersecurity, Data Analytics
- c) Business Strategy
- d) Business Development
- e) Digital Transformation
- f) Consulting services
- g) Special Projects such as Public Warning System solution, etc.
- h) Preparation of Studies & Technical Specifications, Tender Evaluator
- i) Specialization in sales, marketing, corporate negotiation and customer relations

11. Professional Experience:

Company / Organisation	Period		Position	Description of Duties
	From	To		
P.G.T. The Magnet Enterprises Ltd	Nov 2020	Present	Chief Executive Officer (CEO)	Senior Advisor in Corporate Strategy, Transformation, Business Development and Technology
American Chamber of Commerce Cyprus (AmCham Cy)	2021 2019	Present 2020	Board Member	Promotion and further strengthening of socio-economic and commercial relations between Cyprus and the United States of America (USA), through the expansion of imports, exports and the provision of a wide range of services.
Cablenet Communication Systems Plc	May 2009	Oct 2020	Chief Commercial Officer (CCO)	Responsible for Corporate and Product Strategy and

	2014	2020	Executive Director Board Member	implementation through strategic sales (direct, indirect) and marketing channels. Responsible for the first line of service (service stores, technical department installations/breakdowns, customer service call center).
Business Association for Telecommunication Enterprises	2010	2020	Board Member	Cultivating prospects for continuous development, performing complex work at many levels, for the promotion and recognition of the capabilities of companies in the sector.
OTEnet Telecommunications Ltd	Nov 2002	Apr 2009	Sales Director	Responsible for Corporate and Product Strategy and implementation through strategic sales and marketing channels
Demstar Information Group	Sep 1998	Oct 2002	Data Communications and Networking Manager	Responsible for integrated local, and remote, digital communications and IT technology solutions.
Signtech USA (San Antonio, Texas, USA)	Mar 1997	Aug 1998	Technical Support Engineer	Technical support of heavy machinery and equipment, in the field of printing outdoor signs on vinyl.
Applied Materials Inc. (Austin, Texas, USA)	Jun 1995	Nov 1996	Manufacturing Technologist	Responsible for integrating complex semiconductor manufacturing systems, and applying methodical fault isolation and troubleshooting techniques, ensuring high quality.

12. List of successful projects:

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/Duties
Tender for the provision of telecommunications expert services for PWS solution for the Republic of Cyprus	May 2021 – Dec 2022	€ 85,100 The total estimated value of the Project to be awarded is €7,000,000	Cyprus Civil Defense	Provision of Expert services, in telecommunications matters for the writing of a full issue of tender terms for supply, installation and operation of a system for sending early warning text messages to mobile phones (Cell Broadcast and/or Location-based SMS) as well as	Study of PWS systems (seven international suppliers), Writing of a full issue of tender conditions, Risk Assessment of the system based on 389/2020, Evaluation of questions and preparation of a draft answer, Technical Evaluation of Tenders.

Project Title	Implementation Dates	Project Value	Recipient	Project Description	Responsibilities/Duties
				support/maintenance of the system with a five-year horizon as mentioned in APPENDIX II: TERMS OF ORDER – TECHNICAL SPECIFICATIONS.	

13. Other related data/information:

Beyond 20 years of extensive experience, with a proven track record in the fields of Telecommunications and Information and Communication Technologies (ICT). I successfully led the overall commercial strategy of OTEnet Telecom and Cablenet Communication Systems Plc from 2002 to 2020. I was responsible for shaping and implementing the commercial strategy through marketing, sales, product development, and customer service activities, ensuring that all commercial operations were aligned to achieve commercial objectives, both short-term and long-term (e.g., Revenue, Profitability, Market Shares), and to achieve commercial success with a clear focus on long-term value creation.

Among other things, I played a significant role in decisions concerning investments for the development of next-generation technological infrastructures, the diversification of the internal operating model aimed at strengthening the customer base, further penetration and establishment of the brand as modern telecommunications providers in Cyprus, as well as Cablenet's entry into mobile telephony and television.

I am knowledgeable about market trends and competition in the Digital Communications sector in Cyprus and abroad, with direct access to relevant organizations in Cyprus and abroad, mainly Malta and Greece. I have also collaborated with the Office of the Commissioner of Communications since its inception to date as an interested member for the proper functioning and regulation of the specific Digital Communications market.



5.2 Previous Projects

- i. Summary of similar projects completed in the last 3 years.

The logo consists of a blue square outline with the letters 'DS' in the top right corner and the handwritten initials 'PT' in the center.

No. 1	Project Title		Tender for the provision of telecommunications expert services (PWS system) for the Republic of Cyprus (Tender No. Π.A 014/2021)				
Name of entity	Country	Total Contract Value (EURO)	Share of the contract carried out by the Entity (%)	Client (Contracting Authority)	Origin of Funding	Dates (start/end)	Other Consortium members (if any)
P.G.T. The Magnet Enterprises Ltd	Cyprus	85.100	100	Cyprus Civil Defence, the Deputy Ministry of Research, Innovation and Digital Policy, and the Ministry of Internal Affairs	100% from National Resources	May 2021 – November 2021	N/A
Detailed description of project					Type of service provided		
<p>The Provision of Expert services, in telecommunications matters for the writing of a full issue of terms of offer for the supply, installation and operation of a system for sending early warning text messages to mobile phones (Cell Broadcast and/or Location-based SMS), as well as support/maintenance of the system with a five-year horizon. The subject matter included the:</p> <ul style="list-style-type: none"> - Study and documentation of the available early warning population messaging systems within the European Union for mobile phones, without requiring any action from mobile phone subscribers. - Consulting services regarding the type of system to be selected (Cell Broadcast, Location-Based SMS, hybrid) and cost estimation of the selected system. - Consulting services for offering the system as a managed service and the desired maintenance over a five-year period. - Drafting the desired technical specifications of the system to be purchased in a way that does not favor or indicate any specific provider. - Drafting other terms of the offer for installation-operation-maintenance that comply with the procurement procedures of the Republic of Cyprus. <p>The study included not only the basic mobile text messaging system (basic modules) but also all additional available features: social media, interruption of radio-television broadcast streams, integration with siren systems, etc. (optional modules), for which the system providers were required to commit to prices with a five-year horizon.</p>					Feasibility Study and specific documentation for implementation of the National Public Warning System.		

No. 2	Project Title		Procurement of Services for the recording of required needs and preparation of a relevant study and tender documents for the development, installation, and operation of a new Computerized System at the Department of Labor Inspection to replace the existing System (Tender No. TEE 02/2023)				
Name of entity	Country	Total Contract Value (EURO)	Share of the contract carried out by the Entity (%)	Client (Contracting Authority)	Origin of Funding	Dates (start/end)	Other Consortium members (if any)
P.G.T. The Magnet Enterprises Ltd	Cyprus	50.000	100%	Ministry of Labour and Social Insurance, Department of Labour Inspection	100% from National Resources	June 2023 – December 2023	N/A
Detailed description of project					Type of service provided		



The goal of the project was the development, installation, and operation of a new integrated Computerized System (ICS) at the Department of Labor Inspection (DLI) of the Ministry of Labor and Social Insurance to replace the existing System. To better assess the scope and complexity of the Project and ensure its success, the implementation of the Project was divided into the following two phases:

(a) PHASE "A" - Recording of project requirements and preparation of Tender Documents Phase "A," which was the subject of this Contract, covered the recording of needs and requirements, the preparation of tender documents for the purpose of inviting bids in a subsequent phase (Phase B, as described below), and the preparation of an implementation plan and an objective cost estimate of the project. The study and recording of needs/requirements needed to be comprehensive to capture all interactions and interconnections of the various applications that needed to exist or be developed. The detailed analysis and design of the system will be carried out by the Contractor of Phase "B," which will follow under a new Contract.

(b) PHASE "B" - Project Implementation (not covered by this Contract) During Phase "B," based on the documents prepared in Phase "A," a new bid will be invited for the execution of a new Contract for the completion of the project, which, as mentioned above, concerns the development, installation, and operation of a new integrated CS at the DLI.

Preparation of needs analysis study, and preparation of tender documents, for the development, installation, and operation of a new ICS to replace the existing System within the framework of a new Contract. The new system is expected to significantly contribute to the automation of the DLI's core operational processes, increase the productivity and efficiency of the responsible officials in their daily tasks, provide targeted and high-quality information, and offer high-level services to citizens.

The study and tender documents included the development and customization of the software, the supply and installation of the necessary equipment for the system's installation, the installation and adaptation of the software, the migration of data from the existing to the new System, the conducting of tests and acceptance checks of the system, user/administrator training, and the maintenance and operational support of the software.

- a. Studied the existing CS of the DLI and document its screens (fields, sub-screens, parametric files, and interconnections of screens with parametric files and other screens).
- b. Conducted personal interviews with members of the Department's staff, as indicated by the Department's Management (10-15 individuals), and prepared and submitted questionnaires to them for completion, so that:
 - i. Any new needs not covered by the existing System are identified, defined, and recorded.
 - ii. Functions/fields/elements of the existing System that may need to be excluded from the new System are documented.
- c. Studied existing customized Computerized Systems used in similar Inspection Services in European countries.
- d. Estimated the cost and time for the development and implementation of the new Computerized System, as described above (software, computer equipment, data migration, user/administrator training, maintenance, and operational support, etc.).

- ii.* Affirmation statement by Cyprus Civil Defense for the successful delivery of expert services in the PWS tender for the Republic of Cyprus.

Refer to attachment.

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