

**TOWARDS SURVIVAL AND SUCCESS
IN THE AIRLINE SECTOR**

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ABSTRACT

The forthcoming air transport liberalization and the Cyprus accession as a full member state of the European Union (E.U); preannounce the change of the airline transport industry of the 21st century. This article emphasizes the need of reforming airlines' contemporary strategic thinking, structure and processes. This paper also suggests several alternative strategies that airline companies should apply in order to survive and be competitive in the coming fierce airline arena.

1. INTRODUCTION

A new business era is emerging in the airline industry resulting of the increasing competition, rapidly evolution of technology, environmental

uncertainties, air transport liberalization and globalization. That's why all airlines are urged to redesign their strategies by establishing co-operations, strategic alliances, reform their functions and processes so as to provide superior customer value. The forthcoming air challenges will affect the world air industry either negatively or positively because the whole air market structure will change. Thus, there is a need of undertaking a strategic marketing audit by all airlines to identify new market segments, needs and expectations of travelers. Those challenges necessitate transforming conventional airlines to compete in the forthcoming dynamic business arena. Furthermore, despite the above mentioned environmental uncertainties; some global events affect the airline industry tremendously, causing many economic consequences.

- The 11th of September
- The war in Iraq
- The SARS virus (Severe Acute Respiratory Syndrome)

Those consequences affect almost all organizations around the world, however they affect especially the airline industry, manufacturers, airline companies and all the related businesses. Thus, Cypriot airlines should be proactive and be well prepared to confront those challenges, to take advantage of the opportunities and be able to face the threats by designing and implementing an effective and efficient strategic marketing plan.

2. PROPOSED STRATEGIC ACTIONS

As a starting point, all airlines must begin with a thorough analysis of all the company's functions and processes. In order to achieve this, airlines should conduct a strategic marketing audit.

A. External Audit (Main Opportunities & Threats)

1. Marketing Environment Audit - Macro environment

- Political/Legal/Fiscal - war, legislations
- Economic – Inflation, Investment, taxes
- Social - cultural, demographic, lifestyles
- Technology – New technology, methods, processes
- Ecological – Pollution, noise, green legislation

1.2 Micro (task) environment: Market, Competition, Distributors, suppliers, advertising agencies

12.1 Market Overview

- Market Segmentation
- Customers' analysis, segmentation current and future profile
- Porter's five competitive force (evaluation of: key competitors, suppliers, customers, new entrants and substitute products/services)

B. Internal Audit (Main Strengths & Weaknesses)

1. Marketing Strategy Audit

1.1 The Company

- Company's background/history
- Any subsidiaries
- Company's mission – marketing myopia, product oriented or market oriented?

1.2 Corporate and Marketing Objectives

- Company's objectives & strategies: Ansoff's and Porter's Strategies
- Main issues (SWOT) facing the company

1.3 Marketing Strategy

- To what extent do they reach their goals? (Abell 3x3 strategic directional matrix)
- Are there any planning & control procedures?
- Is the communication strategy Internally & Externally effective? (three-fold marketing philosophy).
- Target Markets (Segmentation, Targeting and Positioning strategies)

2. The Marketing Organization Audit

- Company's structure: Centralized, Decentralized, flat or pyramid
- Company's philosophy – product or market oriented (customer oriented)

- Lines of communication
- Internal relationships
- Employees training, compensation, evaluation and control

3. Marketing Information Systems

- Is there enough information to existing & potential markets/ segments/ geographical markets?
- Is there an efficient MIS? (Internal records, CIS, MR, MDDS)
- Any Planning & Control systems?
- Any system for New Product Development (NPD) to get new ideas, modifications?

4. Marketing Productivity Audit

- How profitable the company is?
- Financial analysis
- Company's income/sales/expenditure/costs
- Increasing and decreasing level of sales/profits/market share etc
- Which segments or business are profitable and which are not?

5. Marketing-Mix Analysis

5.1 Product and Services

- Product portfolio/routes/destinations
- Product/service characteristics
- Use of portfolio matrices i.e. BCG, PLC

5.2 Price

- Company's pricing strategy (Active or passive)
- Evaluation of strategy whether skimming, penetration, break even, economies of scale
- Pricing tactics

5.3 Value Chain (Distribution)

- Market coverage level
- Distribution structure, direct, wholesalers, middlemen
- Travel agencies, GDS, CRS
- Channels Configuration
- Intensity

5.4 Promotion

- Advertising
- Personal selling
- Sales promotion
- PR
- Direct Marketing

5.5 People

- Sales force procedures
- Internal marketing
- Motivation schemes

- Training
- Communication/co-operation
- Inter-functional efficiency

3. SEGMENTING THE AIR TRAVEL MARKET

Market segmentation is the process of identifying and sub-dividing the market into homogeneous sub-segments with similar response characteristics and behavior. Thus, market segmentation prepares the ground for the market targeting and positioning strategy.

Airline companies should apply following segmentation matrices so as to draw the right strategic decisions on their segmentation principles.

- Key country matrix
- Brand positioning

Due to the intense competition in the market the organizations are trying to design effective marketing strategies to satisfy their customers needs. Firms to be market-driven should understand how buyers' needs and wants change and satisfy them by offering superior value. One of the most essential marketing tools for identifying the different needs and wants of the market is the market segmentation.

The Segmentation, Targeting and Positioning (STP) Process:

1	Situation analysis	<ul style="list-style-type: none"> Identify the organization's position, capabilities, objectives and constraints (Weaknesses)
2	Market Segmentation	<ul style="list-style-type: none"> Identify the segmentation variables and segment the markets Develop profiles of each segment
3	Market Targeting	<ul style="list-style-type: none"> Evaluate the potential and attractiveness of each segment Select the target segment
4	The Product Positioning	<ul style="list-style-type: none"> Identify the positioning concept within each target segment Select and develop the appropriate positioning concepts
5	Marketing Mix	<ul style="list-style-type: none"> Develop the marketing mix strategy

In the past all organizations were applying mass marketing producing and distributing a product without taking into consideration the customers needs. However, nowadays this philosophy is not effective. Nowadays customers demand to have certain benefits by buying a product and service. Customers are demanding, they look for quality, price, punctuality, availability, service, warranty etc. The most important factor that makes an airline successful is to be marketing-orientated. Airlines should invest in identifying their customers profile, needs, requirements and expectations.

4. CHOOSE THE RIGHT STRATEGIC DIRECTION

After a careful and marketing led evaluation of the strategic marketing audit and company's capabilities and resources. Management must draw a specific strategic direction or choose one or a combination of the following strategic alternatives.

4.1 Porter's Three Generic Strategies:

4.1.1 Cost Leadership – The firm concentrates on achieving economies of sales e.g. producing large production means lower cost and setting lower prices.

4.1.2 Differentiation – To give emphasis on a particular element of the marketing mix that it's seen by customers as important i.e. quality, service.

4.1.3 Focus/Niche – The organization concentrates its effort upon one or small market segment. IT can build specialization and create barriers to entry.

Strategies for Market Leader:

- Expansion of the overall market – identify new uses of products, target non-users,
- Keep the existing market share – Heavy advertising, relationships, distribution,

- Expansion of the current market share – Heavy advertising, NPD, Geographic expansion.

Strategies for market Challengers:

- Price discounting
- Product innovation
- Differentiation
- Market Development

Strategies for Followers:

- Follow the leader closely, at a distance or selectively

Strategies for Nichers:

- Focus your strengths on specific profitable segment or segments.
- Specializing: Geographically, By product, On quality, On service, Type of customer

Most of the airline companies failed to pursue one of the above strategic options as a result to be forced to stuck in the “ Middle of the road” position where there is no define market and objectives are confused. Small and medium size airlines should follow a differentiation strategy to give more emphasis on a particular element of marketing mix that is seen by customers to be important. It’s most appropriate to use this aggressive strategy to become leaders.

As it concerns the strategic issue based on Porter's competitive industry model, airlines have to identify the following: (Porter's Five Competitive Forces)

- a) What is the threat of entry into a new market and where does it arise?
- b) Are there any other substitutes services and what is their impact on the organization and industry?
- c) Who are the buyers and what is the extend of their power with regard to the organization?
- d) Who are our suppliers and what is their power with regard to the organization?
- e) Who are our present and potential competitors and how intense is present and potential competitive rivalry?

4.2 Ansoff's Growth Product/Market Strategic Matrix

4.2.1 Market Penetration: Marketing existing products/services to existing markets

4.2.2 Market Development: Marketing existing products/services to new markets

4.2.3 Product Development: Marketing new products/services to existing markets

4.2.4 Diversification: Marketing new products/services into new markets

However, in order to set the right strategic direction; airlines must also investigate and evaluate the importance of the following portfolio matrices:

- Abell 3x3 direction strategy
- Product Life Cycle Analysis (PLC)
- Boston Consulting Group Growth-share Matrix (BCG)

By applying the above-mentioned matrices and analyses airlines will be in a position to identify the position/stage of each product/service/routing and market segment. They should analyze their position in terms of ROI whether they are cash cows, rising stars, problem child or dogs. So as to set the appropriate strategy for each product/routing/market whether to invest funds into a particular market or stop servicing certain unprofitable routings. Airlines must set their strategic objectives and marketing strategies with a short/medium and long-term perspective.

5. FOCUSING ON THE BUSINESS TRAVEL MARKET

It is not easy to identify and meet all travelers' needs and wants. That is why airlines are segmenting the air market into smaller segments such as the business travel segment, the leisure travel segment and the cargo segment. Nonetheless, after segmenting the air transport market into small segments it is easier for an airline to set its objectives. To choose what segment to focus on and prepare the appropriate promotional plans to satisfy its specialized needs and wants. Airlines must identify and evaluate the potential of each market

segment that they want to serve. They must decide on which travel segment they want to invest more.

- the business travel market.,
- the leisure travel market.,
- the air freight market.

Thus, airlines must identify who actually is the customer so as to focus on the company's resources and promotional activities. Furthermore, they should upgrade their booking and CRS procedures and policies so as to provide more facilities and flexibility to business travelers. Based on the inflight survey by satisfying the business traveler requirements will gain a competitive edge against their rivals. In the future, an airline in order to differentiate should offer the business travelers more leg-space, comfortable seats, hot towels, special meals, special services by the cabin crew, easy access to the Internet, WAP, last time bookings, and secure their transport to/from the airport.

Business travel segment in Cyprus is mostly male passengers, 30 - 54 years old. They are businessmen, managers and corporate business travelers. The 58% of them are traveling on club class. Cypriot airlines should keep track of its upgrading measures by receiving information, customers' expectations and even complaints from the passengers so as to set its future marketing strategies and allocate the appropriate funds for each travel segment. The passengers who traveled for business (which is the business travel market) mostly travel on club class and they are yield passengers.

- The 41% of the total passengers traveled for business reasons.,
- The 59% traveled for other reasons.

The 41% of the total traffic shows that the business segment is a very respectable and substantial yield segment.

The four essential needs of the business traveler are:

- a. High frequency of conveniently timed flights for point-to-point and the connecting passenger.,
- b. Frequent flyer programs are becoming a significant factor in airline choice.,
- c. Safety and punctuality are also very important elements for a Business traveler.,
- d. Furthermore, flexibility is required by the short-haul business traveler.

Flexibility

to make cancellations and re-bookings easily without penalty.

6. COMMUNICATION PLAN

In order to achieve the predetermined objectives and strategies; airlines must design, develop and implement an efficient and effective communication plan to communicate those strategies to customers and the air transport market as a whole so as retain, inform current customers and attract new business.

- Advertising
- Personal Selling
- Sales Promotion
- Direct Marketing
- Public Relations

The four key issues in the promotional planning are the following:

- a. Who is the person who the information must be addressed to?
- b. What is the nature of information sought by the customer e.g. benefits, comparison with competition?
- c. When is the customer seeking for information in the market?
- d. Which promotional channels are likely to be used to acquire the required information?

Communication is the process of applying all the elements of the marketing mix, to make known the company's objectives, strategies and products to the external and internal environment of the organization and all others who influence purchasing decisions.

Some Communication Objectives

	To....	
Education and Information	Create awareness Inform/Get enquiries Get company name in file Create company image	These objectives contribute towards a total marketing program, the objective of which is to achieve profitable sales
Branding and Image building	Inaccessible to salesmen Ease the selling task Alter perceptions Influence end-users	
Affecting attitudes	Reduce selling costs Achieve sales	
Loyalty and reminding	Establish connections and direct contact	

1. Advertising activities

Advertising is any paid form of non-personal presentation and promotion of ideas, goods or services by an identified sponsor.

<ul style="list-style-type: none">• Print & broadcast ads• Packaging-outer• Packaging inserts• Motion pictures• Brochures and booklets• Posters and leaflets• Directories	<ul style="list-style-type: none">• Reprints of ads• Billboards• Display sign• Point-of purchase displays• Audio-visual material• Symbols and logos• Video tapes
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2. Personal Selling activities

It's a face-to-face interaction with one or more prospective purchasers for the purpose of increasing sales.

<ul style="list-style-type: none">• Aircraft Demonstrations• Sales presentations• Sales meetings	<ul style="list-style-type: none">• Samples• Fairs and trade shows• Incentive programs
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3. Sales Promotion activities

S.P is a short-term incentive to encourage trial or purchase of a product or service occasions, create an incentive for purchase.

<ul style="list-style-type: none">• Frequent flyer program• Contest, games, lotteries• Premiums and gifts• Sampling• Fairs and trade shows• Exhibits• Entertainment	<ul style="list-style-type: none">• Low-interest financing• Trade-in allowances• Trading stamps• Rebates• Demonstrations• Continuity programs
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4. **Direct Marketing activities**

D.M is a non-personal contact tool to communicate with a specific customer

<ul style="list-style-type: none">• Catalogues• Mailings• Telemarketing• Radio, magazines, newspapers,• Internet, Electronic shopping	<ul style="list-style-type: none">• Company's web page• Fax mail• E-mail• Voice mail• TV shopping• Kiosk shopping
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5. **Publicity - Public Relations (PR) activities**

P.R is a variety of programs designed to promote and protect a company's image and products.

<ul style="list-style-type: none">• Press kits• Speeches• Annual reports• Charitable donations• Sponsorships	<ul style="list-style-type: none">• Publications• Community relations• Lobbying• Identity media• Company magazine• Seminars
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7. RELATIONSHIP MARKETING MANAGEMENT (RMM)

Nowadays, due to the forthcoming air travel business transformation; airlines must design, develop and implement new marketing concepts to gain competitive advantage. Relationship marketing is to build and manage relationships with key customers or with other companies in related industry. Relationship marketing plays an essential role in achieving company's objectives. Strategic relationships can be made among suppliers, producers, distribution channel organizations and customers. Nowadays more and more companies apply relationship marketing to share costs, technology and marketing so as to survive and compete in the intense competitive environment. The air transport business competition is intensifying and travelers become more and more demanding, thus airlines should also establish a marketing relationship management program.

- **Customer Relationship Management (CRM)**
- **Organization Relationship Management (ORM)**

Relationship marketing consists of six markets where the management should be capable to manage and manipulate.

1. **Customers markets** - Should undertake promotion to external markets to retain existing customers and gain new ones.
2. **Referral markets** - Should get others to do the marketing for us such as intermediaries, travel agencies, and tour operators. Use of interactive marketing.
3. **Suppliers markets** - Establish co-operation with suppliers, CRS, GDS
4. **Employees market** - The company should attract quality staff
5. **Internal markets:** Keep our employees happy to improve quality and customer service. Use of internal marketing, staff should be committed to achieve company's objectives
6. **Influence markets**-relationships with influence markets such as financial institutions and government

The relationships objectives may be:

- To gain access to markets.,
- Enhance value offerings.,
- Reduce the risks by the rapid environmental changes.,
- Share skills and financial risks.,
- Utilization of distribution channels.,

- Sharing technology development costs.

Types of Organizational Relationships:

1. Vertical Relationships - they are the relationships between suppliers, manufacturers, distributors and consumers.

- a. Customer-Supplier Relationships
- b) Distribution Channel Relationships
- c) End-User Customer Relationships

2. Horizontal or Lateral Relationships are between organizations, competitors,

non-profit organizations and the government.

- a) Strategic Alliances
- b) Joint Ventures

3. Internal Relationships are between the firm and business units, employees and functional

departments. The objective is to encourage and facilitate Cross-functional cooperation rather than specialization so as to achieve NPD.

However, there is organizational resistance to change to every new idea, new processes or innovations. Thus, an organizational culture change program is indispensable to be able to adapt and adjust company's strategies to the future competitive and highly innovative airline transport environment. Consequently,

in this liberalized and deregulated environment, airlines should be cost effective in order to succeed. If a company has high costs and no flexibility it will be very difficult to survive in the future competitive environment of the air transport. Also, in a deregulated market it should be flexible and adaptable to the rapidly changing market environment and more demanding travelers.

8. DISCUSSION/SUGGESTIONS

Due to the forthcoming intense competition, rapidly evolving technology and globalization there is a need for cutting costs. Airlines should establish a Yield Management Control Unit. Yield Management's contribution will be significant to the firm's profitability. It is the process used to match demand (potential passengers) and supply (seats) to earn the maximum revenue on each and every flight. With Yield management airlines will identify the no-show passengers, the seat spoilage, why flights that had been fully booked depart with empty seats. By protecting enough seats for the late yield passengers and allocating the remaining seats to lower fares and balance yield and load factor. Furthermore the computer support and yield management techniques, yield controllers will be able to control overbookings and future flights must be booked with precise number of seats allocated to each fare/class. Nonetheless a successful management unit will provide some benefits to the business travelers such as; more seats available for last minute bookings, greater frequency to more destinations and more markets and destinations. However

the benefits of the leisure passenger will be the declining average fares, and more seats available at discount fares.

Airlines should try to monitor the capacity and optimize seat allocation. They must set up a successful yield management unit to optimize distribution of flight seats, statistics and increase its revenue. For this cause the manipulation of an airline's reservations control system (CRS) will enable an airline company to maximize passenger revenue and curtailing of costs. Indeed the business travel segment is yield traffic and must be prepared to take advantage of this profitable challenge. The business travel segment in Cyprus is about 41%, which is a substantial share. However due to the air travel liberalization airlines should reanalyze, identify the special requirements, of the business traveler, corporate or individual business men and try to satisfy their special needs and wants by providing superior value.

Nonetheless, airline companies should also apply the three-fold marketing philosophy; Organizations should apply the Three-Fold Marketing Philosophy in order to be able to convey effectively their objectives and strategies to internal and external customers.

The Three-Fold Marketing Philosophy

- Internal Marketing
- External Marketing
- Interactive Marketing

1. External Marketing

Marketing company's products to external customers by applying the marketing mix components.

(Product/Price/Place/Promotion/People/Process/Physical Evidence)

2. Internal Marketing

Internal marketing is concerned with the management of human resources. It's the marketing applied within the company towards company's staff to be customer-oriented. Internal marketing is to create a service and customer orientation organization. It is about company's internal customers, the employees to train and motivate and supporting personnel to work as a team and a cross-functional structure to provide superior value and customer satisfaction. Internal marketing focuses on increasing the good relations between the company and its people. It can be achieved through education, training, seminars, more incentives, creating better working climate and culture of the organization.

3. Interactive Marketing

Interactive marketing describes the employees' skills in handling customer contact. In the marketing of services, the service quality is enmeshed with the service deliverer and is especially true for professional services. The client judges service quality not only by its technical quality but also by its functional. (e.g. not only whether the surgery was successful but also how much attention did the surgeon pay to the patient.)

Airlines should also apply people empowerment so as to create a learning organization. Airlines by providing training and motivation to their employees, they will be more capable and gain more skills and knowledge. Employees should will be able to handle customers and work as a team and providing customer satisfaction. The continuous training on customer handling on the ground e.g. booking offices, reservation, ticketing, customer complains, airport counters and on board with inflight service. In addition, airlines have to identify customer needs and wants at each stage of service of his/her contact with the airline.

Therefore customer service is one of the most important factors in the aviation industry. Consequently based on the stages of service. An essential element of service is heterogeneity where the product cannot be separated from the service. All services on board and on the ground are interrelated to each other, the one complements the other. Thus airport services and handling should be excellent and go along with the airlines services. Companies could identify their passengers and choose what segment and how to serve it. Airlines must take into consideration the following issues in upgrading their service.

- a. at the point-of-sale which is the initial stage. In this stage airlines should correct the processing of reservation and ticketing procedures, consider their special requirements.,
- b. at the airport which is the second level should consider the parking place, check-in, baggage handling, passenger information and direction and boarding facilities.

- c. In-flight service is the third stage where an airline must provide comfortable seats, good catering, entertainment and nice cabin attitude.,
- d. Post-flight service is the final level of service where airlines have to be very careful on miss-handled baggage, refunds, handle any complaints and provide coach.

Furthermore, airlines have to apply the generic value chain analysis. Airline companies should analyze their operations and procedures so as to identify and explore profitable opportunities to build a competitive advantage. They have to examine their reservations procedures, customer handling, airport facilities, crew appearance, inflight service etc. so as to identify any weaknesses to correct and improve them and find innovative ways to differentiate and gain competitive edge through synergetic use of all its activities such as marketing, technology, functions, procedures, human resources and management.

Based on a research, the 63% of the business travelers in Cyprus were corporate business travelers and they traveled on club class and another important information was that the trip was paid by their company. It is very important to know the reasons why passengers are choosing a specific airline. According to the survey the main reasons for businessmen in choosing an airline were:

- the schedule
- offering frequent flights
- consistent timings
- connectability

Marketing research should be carried out on a continuous basis because customer needs and requirements change continuously. Airlines should be upgrading their product and services and be up-to-date with what is happening in the market and future travel trends and technologies. Because of these new developments some airlines will focus their strength on a specific travel segment. Having identified the needs and expectations of the business travel segment the companies should penetrate more and increase their market share in this particular market. An organization in this new global market environment and the great impact of leading-edge technologies should possess five important ingredients to succeed:

- synergies
- strategic alliances
- joint ventures
- New product development (NPD)
- E-business oriented

Furthermore successful airlines should go along with the innovation and technology in order to manage environmental changes and be competitive in the air industry. That's why an airline in order to survive in the forthcoming liberalization and environmental uncertainties should set a strong IT department to provide training and assistance throughout the organization, advising the management on the information and communication technologies (ITCs), IT infrastructure enables airlines to have direct conduct with customers

globally. Being able to perform many of their current business activities through the Internet so as to provide superior benefits to customers.

All airlines should consider the globalization concept as a great opportunity and be proactive by entering into new alliances with other airlines to strengthen their position altering their conventional strategies so as to gain further market access and strengthen their global position. The world air transport industry is experiencing a lot of changes; they set up consortiums or partnerships and cooperations such as KLM and Northwest, British Airways and USAir are few examples of global competitive strategies. More and more airlines are entering into marketing alliances so as to be more competitive, cut costs and have a wider schedule. Many carriers discontinue unprofitable routes like American Airlines and Japan Airlines and they establish agreement with other carriers so as to carry their traffic via these points. In addition, take into consideration the joint ventures between American Airlines, Canadian Airlines, Aer Lingus, Cathay Pacific and Qantas Airlines creating the “One World Co.” also Star and Wings global alliances.

Due to the increasing trend of low-fare charter airline companies such as Easy Jet or Go. The schedule carriers are urged to alter their traditional business philosophy. They should redesign their strategies, their organizational structures and their strategic thinking in general. They should be flexible, cost-effective and fast in decision-making. They should decide whether to serve all segments equally or invest more on a specific potential profitable travel segment.

Airlines should give more emphasis on the business travel market. Airlines must identify and evaluate the potential of each market segment that they want to serve. Furthermore, they should upgrade their booking and CRS procedures and policies so as to provide more facilities and flexibility to business travelers. Based on the inflight survey by satisfying the business traveler requirements will gain a competitive edge against their rivals. In the future an airline in order to differentiate should offer to the business travelers more leg-space, comfortable seats, hot towels, special meals, special service by the cabin crew, easy access to the Internet, WAP, last time bookings, and secure their transport to/from the airport.

Yet, despite the world travel developments of IATA official predictions are very encouraging. The international air traffic will double by the year 2010. Besides the air transport developments there are many opportunities to be explored. They will identify their weaknesses so as to undertake the appropriate measures to strengthen them. The world economical growth will be especially to the Pacific (Asia). The business travel market will increase rapidly, as international business become more competitive and the world will become a global market. Nowadays, Multi-national companies establish collaborations or set-up business all over the world. Thus, the air-travel will be of high demand and intense competition.

Nevertheless other important factors for the short-haul connecting business traveler are; baggage handling so as traveler's baggage to reach the final

destination. Besides of the above should provide non-stop service, in-flight entertainment for long-haul flights and effective marketing will provide flight frequency, standardized departure/arrival timings and a morning arrival so as to attend a meeting and provision of phone/WAP/fax/laptop. Business travel market is of major importance in airline marketing.

Airlines must enter quickly into this new and promising air travel market, based on their product/market matrix analysis; withdrawn from unprofitable routes, provide more capacity to a route when there is increasing demand, offer lower fares/promotional fares, reduce costs, establish marketing alliances, develop a large network of service so as to have flexibility to switch from one route to other and not be dependent on a particular market. Cypriot Airlines must get into negotiations with the government and all parties involved in finding a strategic direction so as airlines to be competitive in the global air transport market, such as:

- If CTO and government want to continue the operation of not profitable routes they must subsidized the airline companies involved.,
- More benefits to business class travelers.,
- Special phone services, special ticket counter treatment, faster check in and priority in aircraft baggage loading and unloading.,
- Stop wasteful meetings.,
- Revise collective agreement for cockpit crew and cabin attendance.,
- Extensive exploitation of the Internet opportunities and e-commerce processes.

During 2000 the number of scheduled international passengers exceeded 2 billion. By the year 2010 it will be around 4 billion. However this growth will be uneven. In Asia the growth will be higher because of the economic development of China, Japan, Singapore, India and other countries in the South East Asia. However, some airlines are testing a new project of Airport Automation where they will have more security, cut costs, improve their efficiency, reduce congestion and will have higher bag handling reliability offering superior customer value. However, by focusing on the business travel market segment doesn't mean that the company will ignore the importance or underestimate the leisure or the freight market segments.

In addition carriers should try to find new innovative ideas to meet customers needs and adapt to the changing environment so as to be in a position to take full advantage of the future challenges. Airlines should introduce some drastic changes in the management system towards decentralization, establish more alliances and find new innovative ways to attract customers. All airlines should consider the globalization concept as a great opportunity and be proactive by entering into new alliances with other airlines to strengthen their position altering their conventional strategies so as to gain further market access and strengthen their global position. Application of integrated marketing to convince and manage all functions to work together, people empowerment, by providing specialize training, educating staff on airline matters, participating in the decision making. Teamwork and synergistic work encourage productivity and efficiency to achieve organization's objectives.

9. CONCLUSIONS

The government protectionism will be withdrawn (as per E.U legislation) and the government's stake in Cyprus Airways will be minimized under 50% of shares. As a result, all airlines will be able to compete on equal rules. Cypriot airlines must stand on their own capabilities, resources and set up an efficient and effective proactive strategic planning to survive and compete in this intense air transport market. Hence, airlines have to undertake a strategic gap analysis to identify if the planned objectives have been attained; if not they have to take corrective action to improve and close the strategic gaps. They should revise their marketing strategies very often considering that, the air industry is very complex and unstable environment. Marketing strategies should be revised either due to oil crisis, political crisis, emerging technologies, customers' expectations, strikes (PESTE factors) and so forth.

Finally, Cypriot airlines should aim to become the leading airlines in the East Mediterranean area and Middle East. Now Cyprus being a member of the EU, which opens new opportunities for co-operation and strategic alliances with other airlines. They must continuously provide superior customer service, further upgrade of their service and apply a hub and spoke network connecting the three continents; Europe, Africa and Asia. However, in order to realize these aggressive strategies there are some infrastructure constraints. Cypriot airlines should engage a discussion with the government for fast improvement of the Larnaca airport infrastructure and implementation of the airport

renovation, transit facilities, faster baggage handling, CAA enhanced service and further expansion.

For the time being, the “Hub-and-Spoke” concept cannot be applied to Larnaca airport. But in the near future it will be feasible as a result of the doubling of air traffic, airport expansion, modernization, automation and privatization. Then the Hub-and-spoke would be very profitable - because of the geographical position of Cyprus linking three Continents; Europe, Africa and Asia - both for Cypriot airlines and Cyprus government in general. Nevertheless, the future trend indicates that business travel market will grow substantially the international air traffic in Europe is predicted to double over the next 15 years. Therefore Cypriot airlines and the government must undertake several projects, set the appropriate aggressive strategies to gain the most of these future travel challenges. They should commence by the airport's expansion, avoid airport congestion, the effectiveness of alternative communication methods, tele-conference, easy access to the Internet so as Larnaca and Paphos airports to become sophisticated and automated European airports connecting the three continents.

Countries one by one would tear up restrictive airline agreements (Schengen agreement), regulations and barriers so as to allow more freedom and development of global airline competition. In a dynamic intensive world like the air transport industry, there is no room for complacency. Consequently, the key success factor for airlines is the ongoing improvement of their schedules, wider network/connectability and upgrading of all their services, cost

effectiveness, improve business travel services, learning organization, airline staff empowerment and application of leadingedge technologies. All airline companies will be operating in a new competitive and aggressive environment that necessitates the airline business transformation, so as to be competitive and succeed in this new air travel marketplace. The airline companies that succeed in the 21st century will be those capable of adapting to constant change and adjusting their strategic thinking to new air transport challenges.

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THE OPTIMUM CURRENCY AREAS

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ABSTRACT

The theory of optimum currency areas (OCAs) attempts to define the domain for a single currency. Mundell (1961) observed that the costs of a monetary union stem from asymmetric shocks and that free factor mobility acts as an absorber of these shocks. One criterion proposed in this article is the openness to mutual trade (McKinnon, 1963). Greater openness means prices are determined on markets and they reduce the ability of the exchange rate to alter significant relative prices. Another criterion proposed is Kenen's (1969) principle on diversification. This states that more diversified economy is less likely to suffer country-specific shocks. In addition, another important criterion is the mobility of input in the area. Great mobility allows the economy to deal with asymmetric shocks through migration.

INTRODUCTION

Countries which join a monetary union will not be able to change the price of their currency or even to determine the quantity of national money in circulation.

The analysis of this article will focus on the 'theory of optimum currency areas'. This theory starts with the original papers of Mundell's (1961) seminal work, followed by McKinnon (1963) and Kenen (1969).

This theory has had more influence on the cost side of the cost - benefit analysis.

Mundell's (1961) original formulation of the optimum currency area stresses the importance of retaining exchange rate flexibility in countries facing asymmetric demand shocks, particularly if these countries are unable to adjust otherwise due to wage rigidity and limited labour mobility. Subsequent work by McKinnon (1963) and Kenen (1969) emphasise the importance of "openness" and "product diversification" in a currency area. McKinnon (1963) argued that openness to external trade should be another important criterion. If an economy was very open, a flexible exchange rate would be relatively ineffective, since changes in the exchange rate would destabilise the internal price level and have few beneficial effects on real wages or the terms of trade. Finally, Kenen (1969) argued that regions with high product diversification would be better able to maintain a currency union than those with low diversification since the latter are subject to larger disturbances.

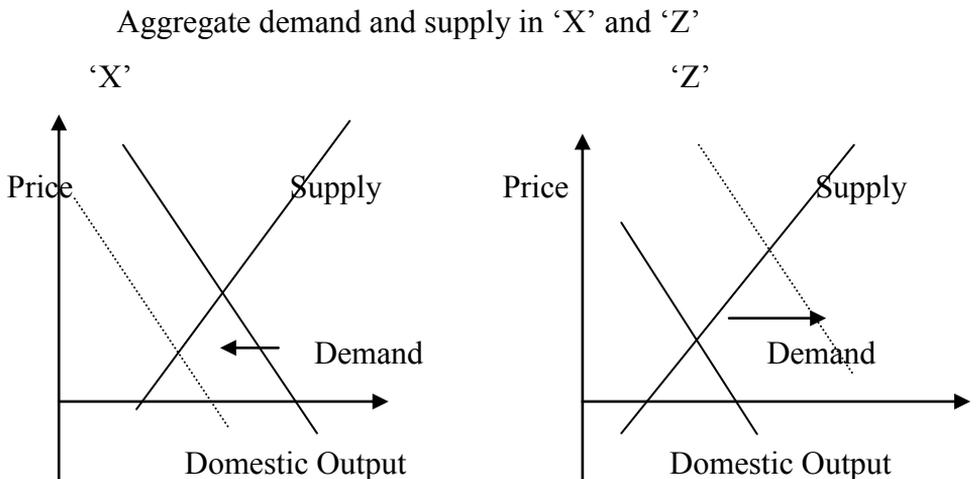
The theory of optimum currency areas has been criticised a lot. Some argue that differences between countries are very important and that, the exchange rate instrument may not be correct for the differences between nations.

Optimum Currency Area Theory

Mundell (1961, p. 657) in his seminal article defined a currency area as "the domain within which exchange rates are fixed". A definition of an "optimum currency area" is best obtained from analysing his own theoretical model. In order to develop the Mundell optimum currency model, it is very appropriate to analyse the following example.

1.0. Shift in Demand

Initially, we introduce 'X' and 'Z' figures. Let us consider that the consumer preference shift from diagram 'X' to diagram 'Z'.



Looking at the two curves above, we can see the aggregate demand and supply curves in an open economy. The demand curve is the negatively sloped line indicating that when the domestic price level increases, the demand for the domestic output declines.

Furthermore, the supply curve reveals that when the price of the domestic output increases, domestic firms will increase their supply, to profit from the higher price. Not only do the supply curves indicate the degree of competition in the markets but also represent the nominal wage rate and price of other inputs which remain constant.

The upward movement of the demand curve analyses the demand shift for diagram 'Z' and the downward movement for diagram 'X'.

Looking at the curve above again, we can clearly see that when the output increases in 'Z', it decreases in 'X'. This may be due to additional unemployment in 'X' and less unemployment in 'Z'.

Now we can examine 'X' and 'Z' current accounts. Current account is expressed as domestic output minus domestic spending.

'X' will have a current account deficit when 'X' consumer spending does not decrease by the same amount. This is most likely to happen as the social security system pays unemployment benefits. As a result of this, the disposable income of 'X' consumers will not decline in the same way as output falls. The outcome of this is to bring an increase in 'X' government budget deficit.

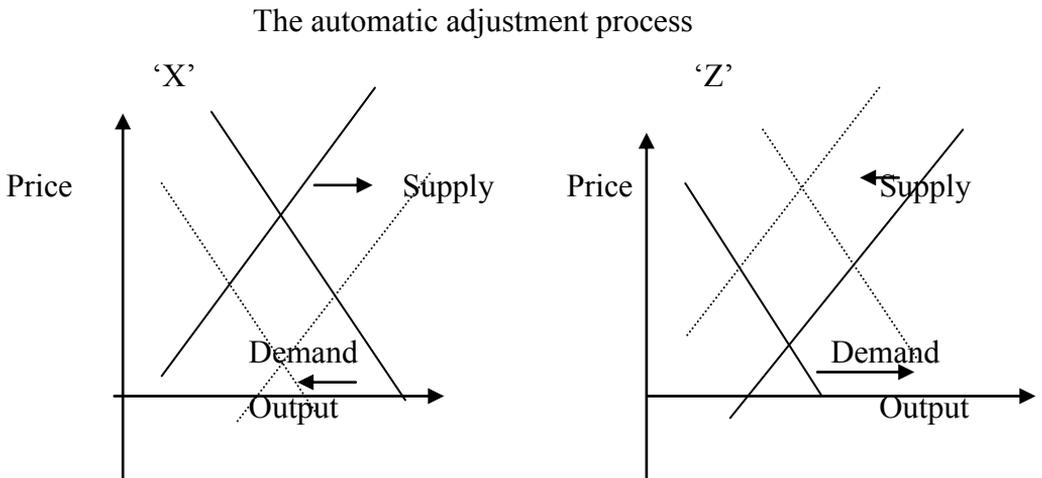
The ‘Z’ situation is exactly the opposite. Diagram ‘Z’ will present the current account with a surplus. The reason is because the output value increases and also in some way ‘Z’ consumers’ spending will not be increased to the same extent.

All the above show that both countries appear to have an adjustment problem. ‘X’ appears to have a high unemployment level and also a current account deficit. ‘Z’ appears to have current account surpluses.

There are two mechanisms, which automatically bring back equilibrium in the two countries. These two mechanisms are the *wage flexibility* and the *mobility of labour*.

1.1. Wage Flexibility

If we consider that wages in diagrams ‘X’ and ‘Z’ are flexible, then ‘X’ unemployed workers will reduce their claims concerning wages and in ‘Z’ the excess in demand for labour will increase the wage rate. The effects can be seen in the following two curves.



The shifts tend to show equilibrium when the wages increase in diagram 'Z'. This will shift the aggregate supply curve upwards and the decrease in the wage rate in 'X' will shift the aggregate supply curve downwards.

In diagram 'X', when the price of output declines, the 'X' products will become more competitive and subject to increased demand. However, exactly the opposite will occur in diagram 'Z'. These events will improve diagram 'X' current account and in diagram 'Z' the current account surplus will be reduced. Also, when the wages and price increase in 'Z', the 'X' products will become competitive. This suggests an upward shift in the 'X' aggregate demand curve.

In the same way, the decline in 'X' costs and prices will shift the 'Z' aggregate demand curve downwards, making the 'Z's' products less competitive.

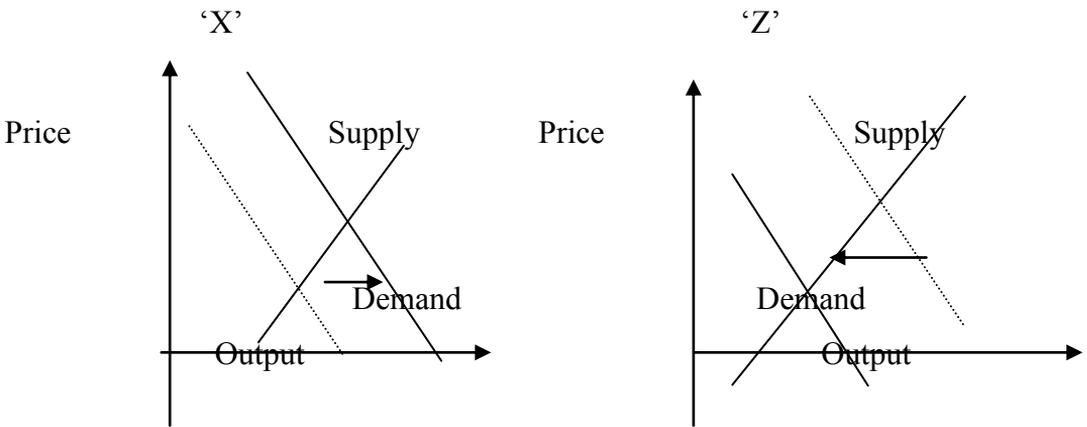
1.2. Mobility of Labour

The second mechanism, which will lead to a new equilibrium, is the *mobility of labour*. When 'X' unemployed workers move to 'Z' because of an excess in demand for labour, on the one hand this movement of labour will eliminate the decline in wages for 'X', but on the other hand it will lead to increase it in the 'Z'. So, the unemployment problem in 'X' disappears but in 'Z' pressures on wages will disappear. The reason for this is that 'X' unemployed was spent on goods and services before producing anything. Furthermore, the current account disequilibria will also decline.

In order to solve the adjustment problem in 'X' and 'Z', the wages must be flexible when the mobility of labour between the two countries is high. If we don't follow these conditions, then the adjustment problem will not disappear.

For example, we will consider what happens if 'X's workers do not move in 'Z' and 'X' does not have any decline in the unemployment situation. Let's see the following two curves.

Effects of a revaluation



In diagram 'Z', the excess in demand for labour will bring upward pressure on wage rate, producing an upward shift of the supply curve. The adjustment to the disequilibrium is coming only through price increase in the 'Z'. With the 'Z' price increases, the 'X' products will become more competitive again, and will lead to an upward shift in the aggregate demand curve of 'X'.

Concluding Mundell's theory, we can evaluate our findings. When wages are unbending and when the labour mobility is limited, then the countries that form a monetary union will find more difficulties in adjusting to the demand shifts

than the countries that have their own national moneys and they can devalue (revalue) currency. In the latter case, the exchange rate adds some flexibility to a system which is overly rigid.

In a different way, a monetary union between two or more countries is optimal if:

- (a) There is a sufficient wage flexibility or
- (b) There is a sufficient mobility of labour

The seminal work of Mundell has led to a series of revisions/debates vis-à-vis his original thesis. We shall incorporate two additions for the purposes of this research.

Firstly, the contribution of McKinnon. McKinnon (1969), commenting on Mundell, proposed the openness of an economy, defined as the ratio of tradeable to nontradeable goods in domestic production and consumption, as a criterion.

McKinnon considered the case of a high share of tradeables. Suppose that the price of nontradeables is held fixed. In order for the current account of the balance of payments to improve, the domestic currency is devalued. Domestic demand for tradeables falls and production increases. Possibly monetary and/or fiscal policy has to be restrictive in addition, in order to suppress excess demand in the nontradeables sector. However, in a very open economy, the implied variations in the domestic price level would be substantial, because of

a fast-increasing marginal rate of transformation for tradeables if the production of nontradeables is already low to start with. An increase in the production of tradeables would require a substantial rise in their relative, and in this case also absolute, price. It is highly unlikely that trade unions would not react by demanding compensating wage increases.

The more open, therefore, the less the impact of a nominal exchange rate change on real competitiveness. As the economy becomes more open, the suppression of excess demand or current account deficits gets increasingly more dependent on restrictive macroeconomic policies, as devaluations or depreciations tend to lead to higher price levels without a substantial reduction in the trade deficit. Complete openness would in McKinnon's analysis boil down to a one-product world, where current account equilibrium can only be restored through income variations, unaccompanied by relative price changes. Expenditure switching does not work in such a world, only expenditure reduction.

Secondly, is the contribution of Kenen in 1969. In Kenen's view (1969), the logic of Mundell's approach requires that regions are defined by their activities. Demand will shift from one region to another if it shifts from one product to another. Perfect interregional labour mobility then equals perfect occupational mobility. Given the absence of such high mobility, Kenen proposed to use the degree of product diversification as a criterion for the desirability of fixed exchange rates. Suppose foreign demand for one good falls (again an asymmetric demand shock). If the country produces and exports a large variety of goods, the resulting unemployment is less serious than in a

less diversified economy and it is hardly necessary to change the exchange rate. The three economists mentioned above are the sources of the "traditional" theory of optimum currency areas (Bofinger, 1994, p.45). Therefore, in order for the EU to be considered an optimum currency area, it must meet the following four conditions:

1. Factors of production (essentially labour) must be mobile.
2. It must be a 'closed' economy; but have openness within the putative Optimum Currency Area.
3. It must be a diversified economy.
4. Mechanisms for fiscal redistribution must exist.

When the four criteria above are met we can say that the EU will be an optimum currency area.

The traditional optimum currency area, which is developed above, lay dormant until the 1990s. This, at first sight appears remarkable. What accounts for the re-emergence of the theory? Wyplosz argues that the question that started to be asked of EMU revolved around 'welfare'. Would EMU increase welfare? 'This question has led to a revival of the literature on optimum currency areas following seminal works outlined above' (Wyplosz, 1997, p.8). Bofinger comments 'In the intensive debate on European Monetary Union (EMU) the theory of 'optimum currency area' has experienced a remarkable revival' (Bofinger, p 40).

Concerning the optimum currency area literature, it would appear that no new theoretical insights have emerged in the last 40 years. Bofinger makes the bald point that the theory is Keynesian in nature (Bofinger, p 38). This is true, since the theory assumes that a fall/rise in the nominal exchange rate will have real effects on the economy, in both the short and long run.

The debate on the relationship between the nominal and real exchange rate is a long-running Keynesian/Monetarist debate. 'Keynesians' faced with the reality of depression in the 1930s, presented a radically different view of the economy. They argued that the changes in the quantity of money would affect the level of economic activity in the short and long run. 'Monetarists' argued that the quantity of money affects only the level of prices in the long run. Consequently, the effectiveness of any exchange rate (nominal) change, on the real economy, is a matter of debate.

Phillips (1958) followed Keynes's work identifying from a statistical study a long run relationship between the rate of nominal wage inflation and the rate of unemployment. A long run with high unemployment would be associated with falling nominal wages; wage deflation. At a lower level of long run unemployment moderate wage, inflation would be experienced. The lower the long run levels of unemployment, the higher the long run level of nominal wage inflation. The implication, as explained in Desai (1975), is that the level of unemployment and inflation are jointly determined by another factor, which determines the position of the economy on its "long run Phillips curve". Desai, following a Keynesian approach, suggested that it was the prevailing general

level of interest rates, which determined the position of the economy on its long run Phillips curve. Keynes had suggested in his General Theory that the rate of interest (a compound of all rates from short to long) was dependent on the state of expectations in the financial market. The market at different times perceives different acceptable levels of interest rates; to ensure a long period of high investment and employment the markets' expectation of interest rates must be kept low. Keynes's message: long run persistent equilibrium was possible, while it was the government's duty to ensure as high an employment equilibrium as possible by maintaining aggregate demand, through active use of fiscal policy and monetary policy (to create a state of low interest rates).

The analysis of Mundell's work started when the demand shifts occur away from the products of one country in favour of another country. Will the shocks occur between the European countries that are planning to enter the monetary union? We will develop two views. The first one is the European Commission view, which was defended in the report 'One Market, One Money'. The second view is associated with Paul Krugman.

The European Commission argued that differential shocks in demand will occur less often in a future monetary union. The reason is because trade is based on product differentiation and economies of scale. That leads to a structure in which countries buy and sell to reach other countries with the same categories of products and shows that the demand shock will affect the countries in the same way. The completion of the single market would reinforce these tendencies with the removal of barriers. Demand shocks would

have similar effects. Instead of being asymmetric, they would be more symmetric.

The second and opposite view has been defended by Paul Krugman. Krugman (1991) argues that economies of scale lead to regional concentration of industrial activities. When the impediments to trade decline, these will have two opposing effects on the localisation of industries. It will be possible to produce closer to the final markets and also to concentrate production so as to profit from economies of scale.

Krugman (1993) also argued that economic integration leads to increased regional specialisation; the situation worsens as the incidence of asymmetric shocks increases. Frankel and Rose (1996) reject Krugman's argument as they find that integration leads to more diversification. Bayoumi and Eichengreen (1993) conclude that both demand and supply shocks are generally much more symmetrical in the United States than in Europe, suggesting that a majority of European countries may face significant costs by joining a monetary union.

Labour Mobility in the US and EU

1.0. The Hypothesis

The 1990's have seen discussions on the single European currency and the optimum currency area leading to references to the USA currency zone system. It is asserted that the key economic difference between the USA and the EU is the mobility of labour. This leads to the conclusion that immobility of labour in the EU means it is not an optimum currency zone. Consequently, the

adoption of a single European currency may cause an increase in the regional disparity of economic activity.

2.0. Labour Markets

The USA literature review is very large; to begin with, Hall (1972) comments that there are significant levels of local unemployment differentials. Murphy and Hofler (1984) analysed the differences in the sectoral composition of employment and the work force in education, which show clear signs of regional unemployment differentials.

Topel (1984) introduced the role of experience, suggesting that regions in which experienced workers dominate are likely to experience relatively persistent unemployment differentials.

In reference to this issue, a literature review on the specific issue of labour mobility the first extensive empirical US/EU study was published in 1990 by Eichengreen (1990b). All the literature pre-1990 was concerned with the USA is labour mobility or the EU is labour mobility separately.

In 1986, OECD concluded that mobility within the United States was two or three times as high as mobility within the European states. The pre - 1990 literature appears clear, - labour mobility is greater in the USA than the EU.

3.0. Balance of Payments

In the same research paper, Eichengreen compares the two nations of Puerto Rico and Portugal. Puerto Rico has the American dollar, as its sole local

currency. There are no barriers to trade or factor mobility between Puerto Rico and the mainland. Puerto Rico is an easy possibility for the authorities to estimate the value of transactions. Puerto Rico is, in effect, a special region of the US; its language is different from that of the mainland and its economy is underdeveloped.

Eichengreen's comparison of the two countries, and their respective relationships with the USA and the EU, led him to comment that "...in Portugal, as in Puerto Rico...labour plays a relatively minor role in adjustment" (Eichengreen, 1990b, p150). In short, Eichengreen suggests that this one region in the USA currency/custom area which is directly comparable to an EU peripheral region has a lower labour mobility rate vis-à-vis other regions. He comments that 'the presence of a distinct language and a distinct regional culture make Puerto Rico's experience all the more apposite for Europe' (Eichengreen, 1990b p145).

Eichengreen's study shows, empirically, that labour mobility rates are higher in the USA than the EU. Perhaps significant for later analysis there appears, loosely, to be differences within the EU between the "*core*" and "*peripheral*". Later in 1990, Eichengreen published a further paper on the labour mobility issue (Eichengreen 1992a) in which he focused on two 'comparable regions - Michigan (USA) and Belgium. Both had similar populations and 'old style' industrial structure economies with a large proportion of manufacturing.

The early 1980s saw a worldwide recession in the industrial countries. Countries/regions such as Michigan and Belgium suffered severe economic shocks. Both experienced unemployment above the average rates in their own customs union. How, asked Eichengreen, did the two regions overcome the shocks? Michigan's response was based upon a high degree of emigration. Real exchange rates barely moved in the time period. Belgium's response was effectively governed by a fall in its real exchange rate. Half of the depreciation was accounted for by a fall in the nominal exchange rate. Migration from Belgium was minimal.

At this point, we will make some comments on Eichengreen's second study. Firstly, he uses the same methodology as in the first study: the changing levels of unemployment are the cause of labour mobility. Secondly, his comments on the changes in the nominal exchange rate cannot, obviously, be tested in the US. Michigan cannot devalue its dollar against Illinois as it has the same currency. This, some may argue, points to the difficulties, or maybe the impossibility, to compare EU regions with US regions.

Although Eichengreen's studies are a primary focus of this article, we will analyse some other studies as well. Sala-i-Martin and Sachs (1992) argued that regional problems can be alleviated through transfers of purchasing power from booming to depressed regions accomplished by a federal fiscal system.

One approach to gauge the extent of asymmetric shocks has been to compute the variability of real exchange rates, since changes in relative prices reflect

shifts in demand or supply affecting one region relative to another. Poloz (1990) compared regional real exchange rates within Canada to national real exchange rates among France, the UK, Italy and Germany. He found that real exchange rates between the Canadian provinces were more variable than those among the four EC countries. Since Canada runs a successful monetary union, the implication is that the Community should be able to do likewise. Eichengreen (1992a) extended Poloz's analysis, using consumer price indices, to four US regions (North East, North Central, South and West) and ten Community countries. Eichengreen found that real exchange rates within the EC have been more variable than real exchange rates within the US, typically by a factor of three to four. De Grauwe and Vanhaverbeke (1993) similarly considered real exchange rates of regions within individual European countries. Using data on unit labour costs for different regions within Germany, France, Spain, the UK and the Netherlands in the period 1977-85, they found that real exchange rates were significantly less variable within European countries than between them. One interpretation is that the European Community as a whole is significantly further from being an optimum currency area than the individual countries, which depend upon the Community.

Final Conclusions

We look first, as indicated, at the impact of nominal exchange rates. The traditional optimum currency area theory argued that change in nominal exchange rates would have real effects on the constituent economies. In that sense it is a Keynesian theory, but Keynesians appear to have problems when analysing the issue of the single currency and regional imbalances. If the

negative monetary shocks issue is ignored, then the case for a single currency, from a Keynesian view, is weakened unless a single currency regime includes a genuine federalist fiscal element.

Eichengreen (1991) argued that nominal exchange rates were, and so to speak outside EMS are, needed in the EU. De Grauwe and Vanhaverbeke (1993) commented that the exchange rates are not very important as an instrument of adjustment between countries. Also, Eichengreen (1997, p.53) commented that '...exchange rate changes may be desirable to facilitate adjustment between regions experiencing large changes in relative prices, assuming that wages and other nominally denominated costs are slow to adapt'.

Poloz (1990) explained that regional real exchange rates in Canada are more variable in comparison with national real exchange rates for the UK, Italy, Germany and France. The occurrence of exchange rate crises shows that negative monetary shocks are rooted in the nominal exchange rates. De Grauwe (1992) argues that three EU countries in the 1980s obtained real benefits from devaluing their currency – France, Belgium and Denmark. De Grauwe, though, does make the point that the power of the exchange rate should not be overstated. “The exchange rate usually has no permanent effects on real variables...but remain a powerful instrument to help countries to eliminate important macro-economic disequilibria, and to make the adjustment process less costly in terms of lost output and employment” (De Grauwe, 1992, p. 59).

A big problem for the EU nations will be the loss of exchange rates. According to Eurostat (1993) 20 percent of the EU regions had per capita GDP less than 75 percent of the EU average. These regions were Greece (all regions), most Portuguese regions, significant areas of Southern Italy and Spain, Ireland and Northern Ireland. These regions, with the exception of Ireland and Northern Ireland, have the lowest labour mobility rates in the EU. Whether or not these regions can expect a disproportionate number of shocks is problematic.

The Organisation for Economic Cooperation and Development (OECD 1986) commented that mobility within the US is two to three times higher than mobility within the European countries. De Grauwe and Vanhaverbeke (1993) argued that the degree of inter-regional labour mobility is higher in the northern European countries (e.g. the UK, Germany, France) than in the southern countries (e.g. Spain, Italy). Also, Eichengreen (1990b) believed that regional unemployment rates are higher within the United States than national unemployment rates within the EC countries. That gives a good indication to believe that labour mobility is higher in the 'north' than in the 'south'. Consequently, the use of labour mobility as an adjustment mechanism is going to be less effective in the 'south' than in 'north'. The loss of a national currency is another adjustment mechanism gone.

The above analysis seems to indicate that only one policy option is likely to ensure that regional imbalances will be in a better position; namely fiscal federalism. The actual financial levels that such a system would need to use

have been estimated by the McDougall Report (1977): If the EU had a budget of 2-2.5 percent of the aggregate of EU GDPs, regional inequality could be reduced by 10 percent; a budget of 5 – 7 percent of GDP would achieve a reduction of 40 percent in inequality. The decision to adopt a system of fiscal federalism that corresponded to, say, 5 percent of EU GDP would probably avert all increases in regional imbalances after the introduction of a single currency.

Such a decision would be a question for politicians to debate. It may be an issue of politics because it is concerned with the society that we wish to live in. Countries may decide to adopt a common currency for political reasons. In the past week 17-23 February 2002, the notion that a UK decision to join EMS may eventually be 'political' rather than economic has been admitted by the UK Labour Government. Mussa (1991, p. 217) says that '... the strongest advocates of EMU tend to be those who see monetary union not only as a beneficial economic mechanism, but also as substantively and symbolically important for strengthening the political dimension of the European Union'. Eichengreen and Frieden (1994, p.5) say 'Events in Europe are being driven mainly by political factors'. So, given the political dimensions of the EU, eventual support for a meaningful system of fiscal federalism may be possible.

The findings of this research would lead to different conclusions if non-liberal or 'Monetarist' perspectives were adopted. Gros and Thygesen (1992) says that Monetarists argue about the recent changes in the UK labour/housing

market as models for the EU. They also argue over the power of the free market to solve economic problems/shocks.

Lastly, this article has attempted to develop an empirically supported theoretical framework which can lead to policy recommendations aimed at ensuring that the EMS zone within the EU is a reasonable approximation to an Optimum Currency Area.

However, it is recognised that policy may well also be in past normative (there are political objectives beyond the 'pure' economic paradigm). Hence, the indicative policy solutions noted are themselves (partly) normative.

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LEADERSHIP

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ABSTRACT

It is believed that a leader is born and not made. However, some people believe that leadership techniques can be successfully taught by already experienced leaders. Research has showed that the majority of leaders became successful leaders because of the hard work and effort they have made and also through the experience they have achieved through the years. (Adair, 1984). Moreover, it is important to be well trained and educated on administration matters since the results of some various research have showed that for an organization to be successful an effective leadership is required by the employees. It is also important for a good leader to be familiar with all the leadership models when leading an organization or a team.

It is believed that a leader is born and not made. However, some people believe that leadership techniques can be successfully taught by already experienced leaders. Research has showed that the majority of leaders became successful leaders because of the hard work and effort they have made and also through the experience they have achieved through the years. (Adair, 1984). Moreover, it is important to be well trained and educated on administration matters since the results of some various research have showed that for an organization to be successful an effective leadership is required by the employees. It is also important for a good leader to be familiar with all the leadership models when leading an organization or a team. (Pashiardis, 2004). Furthermore, Constantinou (2001) supports that each leader differs. Long-term scientific researches try to expose the relationship between the leaders and their inferiors and at what extent their relationship is affected. On the basis of the relationship between a leader and its inferiors a number of models were developed. (Constantinou, 2001). In addition, it is important to note that there are numerous leadership models and some of them are similar in structure and they were often used by organizations in order to resolve some of their problems. (Mind Tools, 2009). There are also some differences among the leadership models since some of the models pay more attention to the humanitarian factor whereas some others focus on the organization method. (Pashiardis, 2004) Thus some of the leadership models are going to be discussed further down.

Lewin, Lippitt & White (1939) were the first who studied the ways which the superiors use their power and divided them in three categories. The

first category refers to the autocratic. The autocratic are the people who take decisions by their selves and perform a very strict supervision on their inferiors. The autocratic leaders demand from their inferiors their absolute obedience and use fear and threat as work motif. Moreover, the autocratic leader takes all decisions by itself and he is the one who sets all the tasks of his team. (Theofilidi, 1994, McCrimmon, 2007). The second category refers to the democratic or participative. This category asks from their inferiors to take part in the decision making and in the administration of the organization. In other words a democratic leader accepts advise from inferior members and seeks to converse with them. Thus this type of leadership is the exact opposite of the autocratic model. The third category is consisted by the Laissez-faire. In this model the leaders allow their inferiors to work freely and they are not interested in the work their inferiors perform. (Theofilidi, 1994, McCrimmon, 2007). Furthermore, more scientists dealt with administration matters. More precisely, Max Weber (1864-1920), described the bureaucratic model as a well structured model where the leader follows all the already established procedures. (Weber, 1905 in Thaker, no date). The basic characteristic of this model is the worker who always tries to be as much effective as possible in the completion of his goals. In order to complete its goals the worker must specialize as much as possible in the specific field. (Pashiardis, 2004). Moreover, Weber described the charismatic model as a type of leadership. According to Webber, “Charisma used to describe a special gift that select individuals possess that gives them the capacity to do extra ordinary things”. (Webber 1947 in Northouse 2004: 181). Furthermore, Weber (1947) said that charismatic leadership is based on the assimilation of a person who possesses

numerous personal abilities and charismas. Charismatic leadership is usually identified by the logic, emotionality, effectiveness and the personality of the leader. (Weber, 1947 in Pashiardis, 2004, Thaker, no date, Sharp, Ward & Hankin, 2006). It is also supported that charisma is an essential tool for the transformational leadership. (Andras & Erdos, 2001). The transformational leadership model gives a lot of emphasis on people with vision, creativeness, and innovation. The transformational leaders listen to their inferiors without judging them and encourage them to share their ideas and dreams. They are also cooperative people and take part in the reshaping of strategies and tactics of the organisation. (Andras & Erdos, 2001). Another model of leadership is the one of moral leadership. This model is based on the values, beliefs and ethics of leaders. In this model the leaders are expected to know and perform their job on the basis of what is 'right' or 'good'.

Moreover, moral leadership is similar to transformational leadership. Both models give emphasis on how to develop a good and trustworthy relation among the employees. What makes moral leadership different however is its focus on values and moral purposes. (Bush, 2003). Another model of leadership which is often compared and confused with transformational leadership is the model of transactional leadership. In this model all relationships are based on a process of exchange. The basic characteristic of this model is that the leader offer rewards and incentives to their supporters. Transactional leadership is based on the social interaction between leaders and inferiors. (Bush, 2003). Other models of leadership are the Situational and Contingency Leadership, which are the same but under a different terminology. Situational and Contingency leader are described as good leaders in problem

solving and are able to assign assignments to different individuals to different stages of a project at different times. τα οποία έχουν την ίδια σημασία αλλά με διαφορετική ονομασία. In this model leadership is reliant on the environment or task at hand. (Blanchard et al, 1994 in Sharp, Ward & Hankin, 2006, Yun, Cox & Sims, 2006 in Smith, 2008).

Furthermore, another model of leadership is the one of instructional leadership. This model gives more emphasis on the direction than on the procedure of leadership. More precisely, its main goal is the teaching and learning. (Bush, 2003) Finally the model of transcendental leadership correlates with individuals with high emotional (Sharp, Ward & Hankin, 2006).

Moreover, the purpose of this project is mainly the description and explanation of a specific leader on the basis of the leadership models. The leader who is going to be described is an educational leader of a local primary school in Cyprus who held the same position for 5 consequent years. The specific leader is an experienced teacher with 20 years in the profession of teaching and a school head master for 10 years. The choice of the specific educational leader was not accidental since he was chosen on the basis of professional and personal reasons which have to do with some substantial characteristics in the organization and administration of the school. What distinguished him as a leader was his democratic and participative spirit towards his colleagues. According to Lewin, Lippitt & White (1939):

the democratic leader listens to the team's ideas and studies them, but will make the final decision. Team players contribute to the final decision thus increasing employee satisfaction and ownership, feeling

their input was considered when the final decision was taken.

(Thaker, no date: no page).

Barnard (1938), pointed out the necessity of cooperation in an organization. He supported that the employees are satisfied when they contribute to the promotion of the goals of the organization they work. (Barnard, 1938 in Constantinou, 2001). According to Constantinou (2001), the democratic method of leadership is the most appropriate for the educational institutions since their purpose is not make profit but to serve the community. More precisely, a team of inspectors in Great Britain which is responsible for the educational levels, states that the leader must coordinate and influence the members of its team so that they can achieve their common goal. (OFSTED, 1995). The specific leader always said that the goal of education is the creation of democratic leaders and that is why the staff of a school must cooperate in order to achieve their goals. He always asked for the views and opinions of all his colleagues and he always treated everyone equally and fairly (educators, students and parents). (Constantinou, 2001). He had daily conversations with colleagues discussing work matters and they all took part in the decision making in resolving any school and administration matters. (Leka, no date). The daily interaction between the teachers gave them the opportunity to share their opinions and views and therefore they all felt responsible and took initiatives in creating a climate of success in their school. The consistent participation of the teachers in the decision making procedure made the teachers commit to the decisions taken and make sure that they were all performed during the school year. (Constantinou, 2001). The leader of the school was always willing to help and took part in all the school events and

organizations. More precisely, he understood the needs of the school staff and he led the teachers and was constantly informed of what was happening in all the classrooms. (Day, Whitaker & Johnston, 1990). In the specific school, there was a climate of cooperation between the teachers and the head master and thus their goals were easily achieved. (Sergiovanni, 1990).

The most important characteristic of this leader was his excellent behavior towards the teachers and students and that is why he was greatly acceptable and likeable by everybody. As a leader he possessed emotional intelligence which is one of the main characteristics of transcendental leadership. (Sharp, Ward & Hankin, 2006). In other words, he tried to understand and help everybody. He was sensitive and he cared for the feelings of his inferiors. For example, many teachers were not courageous enough to use the computers as a teaching tool in their classrooms. As a leader, he patiently listens to their problems and fears and tried to encourage his teachers in using the computers in their teaching. Therefore, through the help of their leader the teachers learn to surpass their fears and started to feel more comfortable with the computers.

Sometimes he functioned as a transformational leader. He constantly tried to promote the feeling of change and the creation of vision to his teachers. Not only did he try to promote new ideas but he also set long term goals and most importantly he was a friend with his inferiors as well as a leader. More precisely, his vision was to make the district school as successful as possible. Moreover, his vision was well known to everybody since in all the school events he made sure that his mission was known and understood by all the school community. What is more important was that he had the support not only of his staff but of the parents too and this is what made him a successful

leader. Furthermore, the headmaster shared information with the teachers in order to encourage them and help them to be as much successful as possible. (Bass, 1985 in Pashiardis, 2004, Burns (1978) in Thaker, (no date). All the new ideas were always welcomed and most of the times they were put into action by the teachers (for example, the idea of a teacher to create a computer lab). Thus, the ability of this headmaster to interact with his inferiors successfully can also characterize him as a transactional leader. (Bush, 2003).

Moreover, this leader also belongs to the category of a charismatic leader. He was always active in the school environment and he was always willing to help and encourage his staff. He was loved, respected and trusted by teachers, students and parents (Pashiardis, 2004, Thaker, no date, Sharp, Ward & Hankin, 2006). He held the position of a headmaster for five years and in these five years he achieved many things for the community he served. He managed to increase the educational level of the school and make it one of the best in the district.

In addition, he dealt each situation differently but always fairly and thus he also be placed in the category of Situational Leadership. Hersey & Blanchard (1988) supported that there is not a perfect model of leadership that can always be applied by everybody. (Pashiardis, 2004, Wagner, 2009). Carnal (1990) relates effective leadership with the current situation that a leader and his inferiors have to face. For example, some factors can influence a leader in following a different model of leadership each time. Some of these factors are: personal characteristics of the leader, the leader – inferior relationship, the goals of the organization, the type of work an organization performs.

(Constantinou, 2001). The school institution is a complicated organization but the specific leader was always able to identify the problem and adopt the best possible strategy in resolving the problem. (Bush, 2003). In other words, because of his big experience in the field he could easily transform into the type of leader that a situation needed in order to solve any existent problem. (Pashiardis, 2004). For example, there were instances where he was strict with some students and made observations to them if they did not behave correctly during school time and there were some other times where he was all helpful and ready to help a new student (e.g. school orientation, acquaintance with the other students). Moreover, sometimes he would transform from a headmaster to a simple teacher in order to introduce new teaching methods to his teachers which would help them make their teaching easier and less complicated.

Furthermore, the bureaucratic model of leadership was also a characteristic not only of the headmaster but of the school an institute in general. The headmaster tried hard to be effective and fulfill all the goals of the school but it was sometimes difficult because of bureaucracy. (Pashiardis, 2004). Furthermore, Max Weber (1864-1920), divided the bureaucratic model in 5 basic points-characteristics: (1) specialization and division of labour, (2) authority hierarchy, (3) choice of members, (4) uniformity in the performance of the project, (5) impersonality in social relations. (Bush, 2003).

Although the role of a headmaster is very difficult because of all the problems that an organization like the school has, this specific leader was a specialist in education management. He studied in university education management which made me an expert in the administrative matters. All the teachers of the school were teaching a subject according to their specialty area

(English teacher, music teacher etc.). It was the headmaster's responsibility to assign the duties of each teacher. This is the basic characteristic of hierarchy. According to Bush (1995), the headmaster of a school is placed on the top of the school hierarchy and he must be respected by the teachers, students and parents. He is the leaders and he is responsible for everything that happens in his school. Moreover, the Ministry of Education is responsible for the teachers' assignation and promotions and everybody who belongs to the education system must obey to the decisions and rules of the Ministry. Thus, the headmaster must make sure that all the regulations are followed and that his staff is treated fairly. Last but not least, the headmaster never showed any favour towards any of the member of the school. He was not discriminating and treated everyone equally and fairly and he was never affected by factors such as relativity or friendship. (Bush, 2003, Pashiardis, 2004).

To conclude, all models of leadership have their advantages and disadvantages. Carlisle (1982) mentions that various researchers support that for an organization to achieve good results, the best model of leadership must be used by the leaders of the organization. (Constantinou, 2001). The leaders must never stop learning and discover new ways to increase their knowledge, abilities and their effectiveness in general if they want their organization to be successful.

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**RENEWABLE ENERGY IN CYPRUS:
SOLAR ENERGY CHALLENGE**

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INTRODUCTION

Market Analysis

The solar energy in Cyprus is a start up venture for new entrepreneurs. The solar heating systems are recently getting the attention of house owners and organizations due to increase in electricity charges and this presents an opportunity for a company to take advantage of the growing market in Cyprus.

The objective of this research is to assess the relative importance over the next three to five years of the changes/trends identified in the PESTEL framework and look at the probability that the changes / trends may occur and their likely impact on the renewable business sector.

Solar water heating is an example of solar thermal technology and has become increasingly popular around the world. Accordingly to the mechanical engineers at the University of Wisconsin's Solar Energy Laboratory, an average four-person household with electric water heater needs about 6,400 kilowatt hours of electricity per year to heat their water. Assuming the electricity is generated by a typical power plant with an efficiency of around 30 per cent, it means that the average electric water heater is responsible for about eight tons of Carbon Dioxide (CO₂) annually, which is almost double that emitted by a typical modern automobile (Anthony Grest, 2007).

Solar water heaters are designed to last many years with little maintenance. The system operates on a 'Thermosiphon' or passive system as a basis (Wikipedia, 2007). A thermosiphon system requires neither a pump nor a controller for the system. The cold water from the city line flows directly to the tank on the roof where the water is heated. As the sun shines on the collector, the water inside the collector flow-tubes is heated. As it heats, this water expands slightly and becomes lighter than the cold water in the solar storage tank mounted above the collector. Gravity then pulls heavier, cold water down from the tank and into the collector inlet. The cold water pushes the heated water through the collector outlet and into the top of the tank, thus heating the water in the tank.

PESTEL Analysis of the business sector in Cyprus is as follows:

Political Forces – Cyprus offers a stable political climate that supports business investment. The new businesses provide employment, increase government revenues through taxes directly. Indirectly, this business boosts the economy in the long run by reducing the expenditure on the fossil fuel consumption which is becoming expensive day by day. Over the last 30 years, there is no noticeable political instability in the country. Efforts are being made by governments across the world to reduce their emission by encouraging the use of environmentally friendly sources of energy as solar power by both organizations and households.

Economic Forces – The country is experiencing a construction boom in the economy and is seeing a considerable growth in the tourism sector after entering the EU in 2003. More over, the country is enjoying a favorable balance of payments and a positive economic growth, probably one of the strongest countries in the EU in terms of economic terms. The rise in housing construction represents a viable market for solar heaters. The low levels of unemployment gives the citizens an increase in disposable income and as a result increased affordability of the solar water heaters even by medium-income earners. The trend is likely to continue in the next three to five years, makes it a lucrative market for solar energy sector.

Sociological Forces – many changes are taking place in the sociological front in Cyprus as well. Some of the important elements in the sociological forces

that may have an impact on the business in the next three to five years are discussed as follows. An increased education level in the country is bringing more awareness in the technologically advanced products than before. From the past few years, Cyprus is experiencing an increase in the average household income. The economists are predicting that it would continue to increase in the next three to five years. There are changes in the Family Size and changes in the family life cycles. All these factors will help the business to market the product more easily than before

Technological Forces – technology is constantly changing. If a company operating in the solar energy sector is to capture and maintain a competitive advantage, it must continuously upgrade its technology. At the present many research institutions around the globe are doing intense research in improving the product so that it continues to be competitive in the market. Improvements in solar technology will result in lowered costs of the equipment and thus offer potentially higher profits for the company in terms of increasing sales. Efforts are also being made to improve the safety and cost efficiency of electrical and natural gas water heating systems. New water heating technologies, such as heat pump water heaters (a combination gas heaters and hot water pump systems) further threaten the viability of the solar thermal market. There is some research and development effort directed toward other environmentally friendly heating systems like geothermal energy. This will substantially compete with solar thermal energy as a clean and dependable energy source. However, these developments are still in nascent stages and would not directly threaten the business in the next three to five years.

Environmental Forces – a lot of environmental forces are changing over the last few years and are likely to change much more intensely in the next three to five years. All these changes are however, directed towards lowering emission of Green House gases. Since the business is environmentally friendly, any changes in the environmental forces would only benefit the company operations rather than threatening the existence. More the changes in these force the better in terms of opportunities for the business growth.

Legal Forces – the present legal factors that would have a direct impact on the business are those related to the establishment of the business like, memorandum of association, documents for shareholders profits, copyright laws for product, shareholders liability and work permits for foreign experienced technical persons to train new hires in the introductory phase of the company. As such these legal forces remain unchanged over the next three to five years. However, on a larger note, one has to look at the environmental legal forces that may change towards of greener environment which might move towards compelling the society to adhere to stricter environment and pollution related laws. Any change in these laws only helps the business to grow and as such are conducive in the long run.

Competitive Environmental Analysis through the Porter's 5 Forces Analysis (Appendix A).

Potential Development of substitute products – The market growth for water heater industry is high, however, for solar water heaters the market growth is

low as a result of the large capital requirements. The water heater industry is in its maturity stage. Increasing use of instantaneous water heaters eliminate the need of storage and provide heated water on demand. However, solar water heaters are in their introductory stage since existing competition in this category is minimal. Given the large initial investments required by the consumers in non-conventional energy related products, not much development is taking place in this sector. As such, the potential development of substitute products is low or non-existing at present. The trend is likely to be the same in the next three to five years to come.

Rivalry among competing firms - the business faces increased competition from the existing and old business. The water heater industry is large with 15 major competitors existing in the market (number of rivals and their size). The competitors not only deal in water heater equipment but also cater to the plumbing requirements of the customers. Their names are established in the market place and are synonymous with the water supply in both domestic and industrial market. Competitors target markets include households, hotels and other industrial users. The competitors thus operate in multi-markets and already established their name over the past few years. The intensity of competition continues to escalate as new markets are targeted. The traditional water heating firms do have a significant market share. With the change competition, competing firms are offering more services for the same prices. As they started offering more and more services, they captured a sizeable market share in this tiny island.

Potential entry of new competitors – there are high capital investment requirements for the solar water heater industry. For this reason, there will be few new entrants. Potential competitors are the existing electric water heater suppliers who may recognize the benefits of the solar heaters and seek to market a similar product. These competitors have the resources to make the required capital investments because of their experience in the industry. They recognized that profits from the previous business can be reinvested to become more competitive in the solar water heater industry. It is difficult at this time decide the size of the operations that are required to be done by the new entrants in to the market place. But it is certain that whoever enters in the market now or in the next few years, should enter with a new product and service differentiation that would give the new entrant a specific advantage over the others. The changing socio-economic factors along with the changes in government regulations are encouraging new entrants in to the business, thus there is a potential entry of new competition. However, the relatively small size of the country and high cost of setting up of facilities is restricting the competitors to a certain extent. Another factor that should be taken into account is the Cyprus joining EU opening its doors to EU, many companies from other EU countries can enter into Cyprus.

Bargaining power of suppliers – As there are many companies in the world manufacturing the solar panels and other associated product providers the bargaining power suppliers is relatively is lower. However, given the size of the country, the manufacturer may compel the company to buy large quantities of the solar panels and associated equipment and as such can have an influence

on the total business. So there is also an element of bargaining power of suppliers. However, this largely depends on the market share the company is likely to capture in the next few years. Given the three to five year time frame, this may become less evident if the company captures a large market share. In the event of the not in a position to capture a large market share, the bargaining power of suppliers may increase in the next three to five years.

Bargaining power of consumers – the changing competition structure and increased awareness of the product in the consumer market is increasing the bargaining power of the consumers. The traditional water heaters are cheap in comparison with that of a solar water heater and for this reason, the switching costs are high and consumers would be less loyal to one supplier. Over the next three to five years, this bargaining power of the consumers may likely to increase due to increase in the competition and increased choice from the EU market.

Challenges Of The Value Chain System And Relationships Towards Competitive Advantage In The Solar Sector.

Value chain is an important tool for identifying ways to create more customer value. All companies have activities to perform like production, marketing, delivery, and after sales support for its products. The value chain helps in identifying some of these strategically relevant activities that help every firm create value and cost in every business firm. On a careful review of these activities one understands that they begin with bringing materials into the

business and concludes with servicing the customer. Taking these value chain activities into the present context, the following assumptions are made. The elements existing in the Porter's (1995) Generic Value Chain is taken for this purpose.

Primary Activities

Inbound Logistics – the major concentration of the specific business question deals with this question. The efficiency of the business deals with how well the firm tackles the inbound logistics. The solar panels are manufactured outside the Cyprus and as such the firm must depend on import of the solar panels from two popular cost effective countries namely India and China. Solar energy sector should decide to import the solar panels from India for three primary reasons. First, India has good manufacturing facilities and is developing a strong research network in the solar panel manufacturing sector. Second, the costs of the solar panels are comparatively lower from other manufacturers in the world. However, the costs of solar panels are cheaper in china. Third, the travel time for sea bound cargo to Cyprus is less from India than from China. It is assumed that these three factors in comparison helped the firm narrow down on India as the prospective supplier of solar panels. The accessories like the storage tank also come from India and are supplied along with the panel manufacturer. This gives the company reduce the coordination time with another supplier. Single manufacturer supplying both the panel and storage tank gives better control over this activity. The competitors usually are importing the solar panels but depend on the local suppliers for the storage

tank. This local procurement of storage tanks is more expensive than importing them. In the long run this would be one of the competitive advantages for the solar energy business.

Operations – the primary activity of operations does not involve in this case as there is no conversion of raw materials in to finished products. The raw materials are sold to final customers as they are.

Outbound Logistics – increasing oil prices and warehouse locations does put a lot of challenges in terms of outbound logistics. However, this challenging business has taken due concerns about the same. The potential location of the warehouse and service centre in Strovolos gives the location advantage to the company to cover the whole country with little less effort than the other competing firms which have ware houses in more than one location. The single location ware house for solar panels gives the firm cost saving. Further to this, the company has tied up with other suppliers of the plumbing materials in each every small town thus giving lesser transportation costs. For example, if a customer orders a solar water heater who is 80 kilometers away from our warehouse, the small van takes the solar panels and water tank and on the way picks up the plumbing materials from the network associate who is close to the place of installation. In some occasions the network associate delivers the accessory plumbing materials to the customer well before the firm arrives with solar panel and storage tank. This would help save costs for the firm and also helps the local plumbing suppliers who support the firm in the long run.

Marketing and Sales – it is one of the crucial activities of the company in the given competitive market place. The marketing and sales office of the company would be located in Nicosia, the capital of Cyprus. The marketing office is connected to the warehouse in Strovolos on a real time computer. The marketing team works independently. Solar water heaters are marketed to more than one segment. This multi-segment calls for different marketing strategies for each segment. Large numbers of customers for the business exist in the household segment. The product is marketing to them directly and indirectly. The sales representatives make cold call to prospective building owners. The ministry of housing and infrastructure development which is responsible for the permission for construction activity in the country will have lists which are publicly assessable to every one. This list would constitute the prospective household customers. The local suppliers of hardware and plumbing materials are also approached to market the product indirectly to the households. These material suppliers are in the company network for the supply of the accessory products. This helps them to improve their business while both the firm and the local supplier take advantage of each others competitive positions in the market. A small percentage of commission is paid to these material suppliers besides the company buying the accessory products. The second largest buyers of solar water heating systems are hospitality industries. A group of marketing professionals work exclusively to market the product at a differential price to this segment by promoting custom built solar heating systems that meet their specific requirements.

Service – Solar water heaters are designed to last many years with little maintenance. So the question of service in this particular case is of little or limited importance to the firm. However, during the installation process, there exists an element of service that differentiates the firm with that of the competitors. The solar energy sector should team up with an upcoming roofing company for the associate service. So when the firm completes the installation the solar heater on the roof top, the roofing company would come and takes care of the roofing so that customer's roof is given a face lift which is damaged due to the installation of the solar panel. The roofing company would change the broken tiles on the roof and repaints the roof at a reasonable cost which is included in the price quotation given to the customer during negotiation process. It is expected that it would save the consumer to going around many different people to get things fixed once the solar system is installed in their household. This convenience is expected to improve the business of the solar business in the long run.

Support Activities

Firm Infrastructure – the firm is simply structured. The total work is supervised by the three promoters. Each of the promoters takes care of each function of the organization and more over the structure of the firm is highly flexible giving substantial freedom for every member of the firm to operate on their own but in tune with the over all performance objectives of the firm. The marketing director (one of the promoters) manages the marketing department who also decides the sales forecast in consultation with the other two. The

Administration director is responsible for the financial and administration function of the firm. The operations manager is responsible for procurement, warehousing and the entire operations related to sales, installations and after sales services. They work along with the employees along side giving the desired motivation and guidance to the people working in the organization. Thanks to the professional qualifications of these directors in the respective fields. They bring in enough knowledge and expertise in their respective fields. It is expected that this would give a long run competitive advantage to the firm.

Human Resource Management – as the firm is still in a nascent stages, the need for Human Resource Management has not felt. As the numbers grow over time, this would come to play a role in the overall value chain. But at present this factor may not have enough impact on the total performance of the firm.

Technology Development – at present company uses IT to facilitate their operations. This reduces the paper work and keep the flow of information in all the directions so that every one in the whole value chain including the customers know what is happening in the value chain network. The firm is working on improving the IT to further improve and to reduce further costs of administration.

Evaluating Profitability and Success of this New Product

Two of the most popular evaluating success and profitability of product so as to set and develop the appropriate future strategies are Boston Consulting Group (BCG) and Product Life Cycle (PLC).

The Boston Consulting Group (BCG) developed and popularized a 2x2 growth share matrix to help business formulate strategies necessary to succeed. Taking this matrix into consideration, the exiting firm would like to understand its location. The different categories as mentioned by BCG Matrix are – Question marks, Stars, Cash Cows, Dogs. (Appendix B)

Question marks – businesses that operate in high-growth markets but have low relative market shares. A question mark requires a lot of cash because the company has to spend money to keep up with the fast growing market, and because it wants to overtake the market leader. The company has to think hard to about whether to keep pouring money into this business. The present business comes in this category. Solar energy is a high-growth market. Due to increased awareness by both public and governments in the global warming, they are more encouraging the use of renewable energy sources. Add to this, increase in oil prices is driving households and organizations alike towards alternative energy resources and hence this sector is growing much faster than expected. The firm is new and as such have relatively low market share.

Product Life Cycle – The PLC analysis is very useful tool to identify in stage the product in its product life cycle, so as to set the appropriate strategies. In

general, the water heater industry is in its mature stage. However, the solar water heater industry is in its introductory stage. Even though the competition in the general water industry is high, in solar water heater industry it is just picking up. So the early entrants will have an opportunity take advantage of this growing industry and earn good profits and market shares. (Appendix C).

With the introduction of the solar energy sector to the Cyprus market, it is expected that competitors will try to modify and enhance their product to make it more attractive to customers and to maintain their current share of the market. They might enhance the technology so that the electrical system is more efficient in producing and storing heat energy by converting on demand heaters to storage water heaters. So, an enterprise in the solar energy sector may choose to further differentiate their product by offering better customer service, improving on the timelines of installations and maintenance of heaters, better payment options and discounts, extending product warranties.

CONCLUSIONS

The main objectives to be pursued by a new company operating in the solar sector are:

- To develop, service and sell / lease all renewable energy based products including solar water heating equipment but not limited to solar energy only.

- To develop a wide area network or provide value added services on the network to develop, service, buy / sell all related products to provide marketing services rising directly or indirectly in the area of renewable energy based industry.
- To undertake the design and development of systems and applications either for its own use or for sale in Cyprus or for export outside Cyprus and to design and development such systems and applications for or on behalf of manufacturers, owners and users of renewable energy systems in Cyprus or elsewhere in the world.
- To set up and run business centers and to carry on the business of this nature, consultancy, research studies, management consultancy, techno-economic feasibility studies of projects, design and development of such systems in the area of renewable energy resources.
- To conduct, sponsor or otherwise participate in training programs, courses, seminar conferences in respect of renewable energy area and for spreading or imparting the knowledge and use of such energy resources including publication of books, journals, bulletins, study / course materials, circulars and news letters and to undertake business as agents, stockiest, distributors, franchise holders or otherwise for trading or dealing in such renewable energy related products and services.

In order to be more successful and have a competitive advantage over the other established competitors, it is also essential to go beyond our own operations and the business also depends on the people who are associated with the business. As such, it is essential to partner with specific suppliers and

distributors to create a superior value-delivery network. The solar energy sector must also plan to link up with other solar panel manufacturer from abroad e.g. India through a real time network.

This real time network provides us to create custom made panels to suit the individual specific requirements based on their rooftop designs so that the panel comes differentiated to suite the customers' specific requirement. This would give the company a long-term advantage. The company should also plan to establish the similar network with other suppliers of accessories like plumbing materials so that storage space is saved. As the order comes and service team goes to deliver, they would pick up the required accessory materials from the other local suppliers saving storage space and cost of inventory.

The solar energy is a new business and new product and entrepreneurs operating or planning to enter into this challenging business sector must be very well prepared and be aware of all what the customers want and all the new business technologies because this new sector offers many challenges and profitable opportunities to be explored. Furthermore, due to the recent global economic crisis and the continuous oil dependence. Organizations and counties are urged to look for other renewable energy, not only solar, but also aeolic (using the air) and wave energy using the sea waves.

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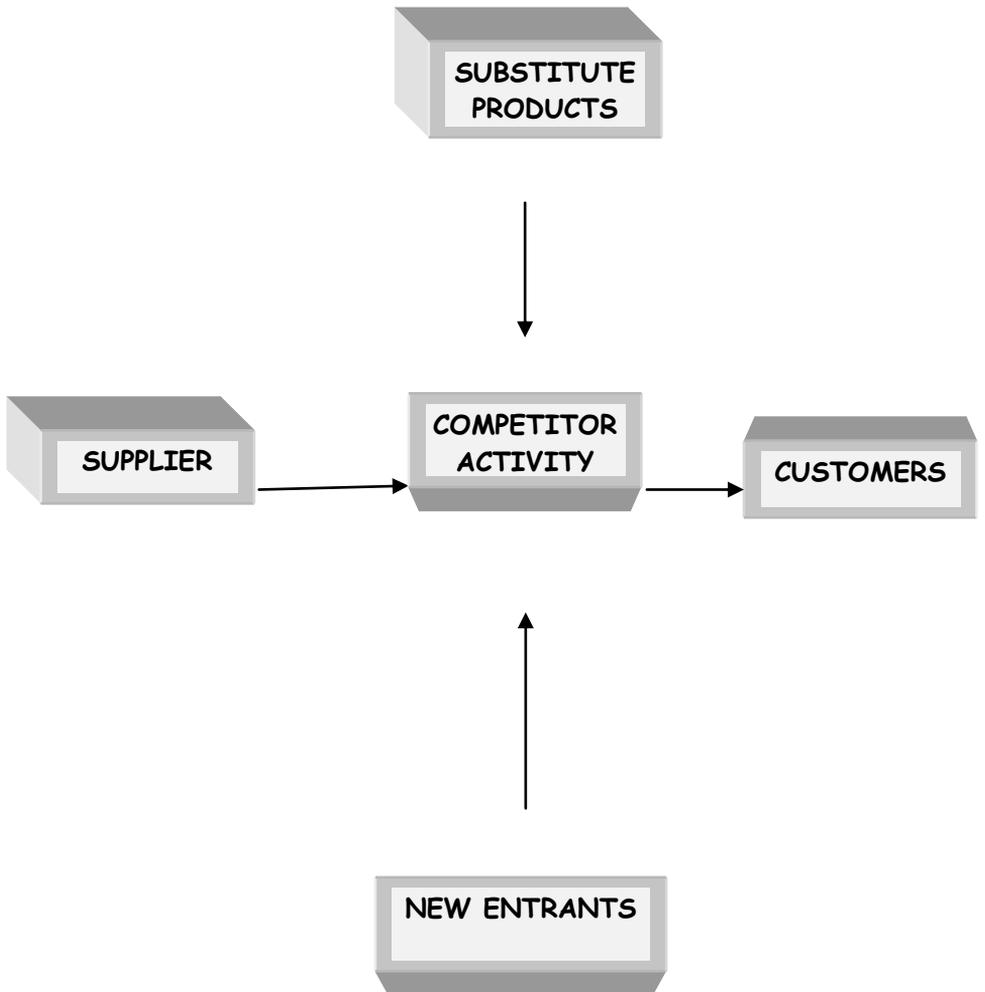
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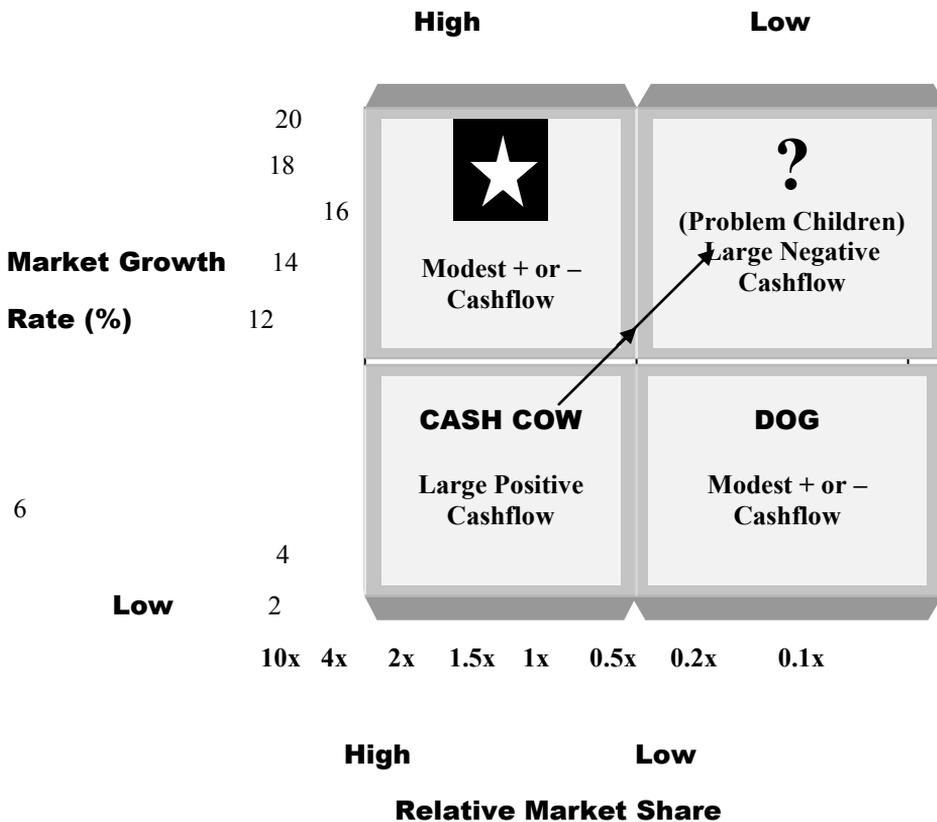
Appendix A

Porter's Five Competitive Forces



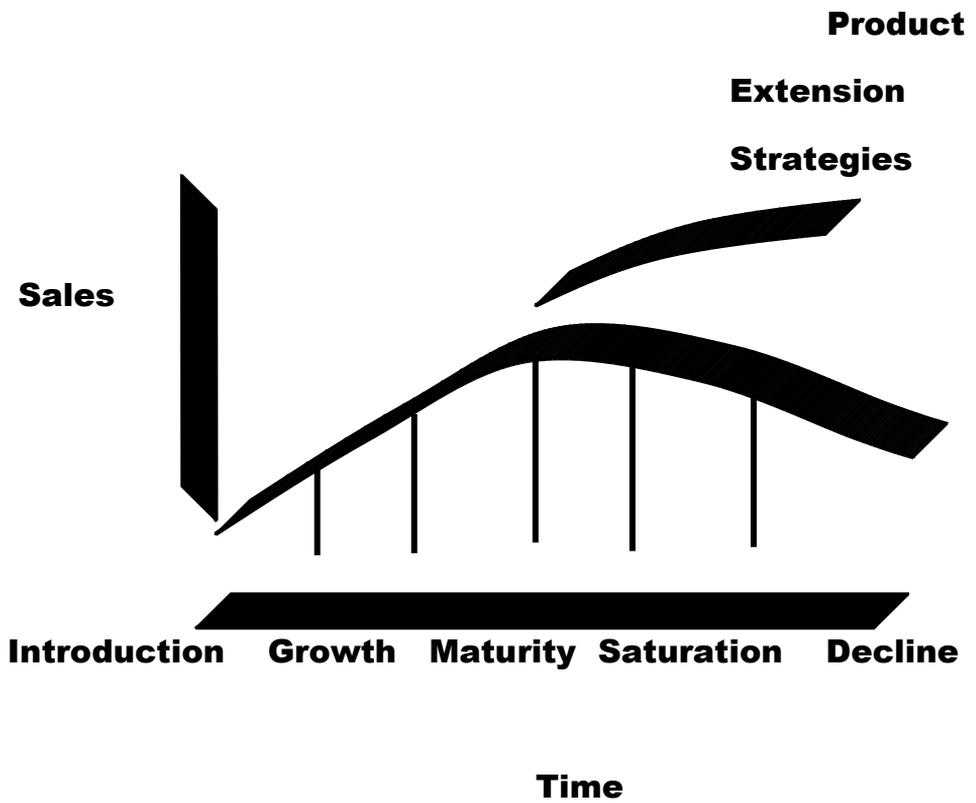
Appendix B

**The Boston Consulting Group's
Growth-Share Matrix (BCG)**



Appendix C

Product Life Cycle (PLC)



THE AGE FACTOR IN SECOND LANGUAGE ACQUISITION

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Can older learners acquire a foreign language in the same way young learners do?

Introduction

The question of whether children can learn a foreign language better than the adolescents or adults has been a subject that caused a lot of debate and for which many studies have been carried out. The reason why I decided to talk about this topic is because I had the experience to teach English as a foreign language to adult learners and I always wondered whether these learners can actually achieve to acquire the language in the same way that young learners do as I personally started learning English at a relatively early age.

The results of different experimental surveys have been similarly opposite. A number of the surveys verified the belief that the young learners have a unique tendency to learn a second language (Oyama, 1976, 1978, cited in Harley, 1986), whereas others

indicate that it is the adolescents and adults that have the benefit (Burstall *et al.*, 1974; Snow&Hoefnagel-Hohle, 1978a,b, cited in Harley, 1986).

The following assignment is divided in two parts. The first part is related to some literature review concerning the factors in different ages that influence the acquisition of a second language, namely, the neurological, the cognitive and the social factor and how the age factor has an effect on the development of the oral skills, on the morpheme sequences as well as on the vocabulary. The second part refers to the implication of my professional context.

The Neurological Factor in age Differences for Second Language Acquisition

Lenneberg (1967, cited in Mayo and Lecumberri,2003) who studied the neurological growth of the brain, puts forward that, for the period of teenage years the person's brain develops into lateralized, for example the right and the left hemispheres take up separate roles and the part for language-processing is located in left hemisphere. Therefore, he suggests that presence of a critical period for learning a language is real and 'once the functions of the brain are lateralized, the mastering of a language becomes more difficult and less successful' (Lenneberg, 1967, cited in Mayo and Lecumberri, 2003:60).

Penfield (Penfield & Roberts, 1959) claims, 'the child's brain is plastic compared with that of an adult' (cited in Harley, 1986:4). Between the ages of nine to twelve, a kid is an expert in oral fluency and at that stage they can acquire two languages at the same time without any difficulty. But with the

completion of the nine years, the mind of a person grows to be unbending and inflexible (Penfield & Roberts, 1959, cited in Harley 1986).

Apart from that, Penfield also assumes that due to the fact that a child has a 'plastic brain', its aptitude to learn 'the early set of the units of a language' is better than that of a grown-up who only has the benefit to increase its vocabulary. Moreover, a child can achieve acquiring the L2 because of a 'switch mechanism' it has, which is 'a conditioned reflex that works in its brain automatically' (Harley, 1986:4). So in cases when a child has to deal with two languages at a time, with this 'mechanism' it can 'turn from one language to another without confusion, without translation, without a mother tongue accent' (Penfield, 1964:80 cited in Harley, 1986:5).

Scovel (1969 cited in Harley 1986) and Seliger (1978 cited in Harley 1986) also maintain that the teenage years are considered to be the 'critical period' for the majority of the people to maintain a pure accent as from a native speaker. Although it is potential for someone to manage to be totally confident about their syntax and vocabulary of the L2 after puberty (Scovel 1981, cited in Harley 1986)

In brief, the most reliable assertion of all that has been put forward related to the fact that kids are benefited neurologically for learning the L2, is that the teenage years are considered to be a 'maturational' defining moment in the capacity to achieve 'a native –like accent' in the L2 (Harley,1986).

The Cognitive Factor in Age Differences in Second Language Acquisition

As Taylor (1974, cited in Harley, 1986) says, taking into account the cognitive factor, we can not believe that grown-ups will not be as capable as kids in the acquisition of a second language. But actually, due to their ‘cognitive maturity’ the grown-ups will find it easy to cope with the ‘abstract nature of language’ more efficiently than kids.

According to Ausubel (1964, cited in Harley, 1986), kids might have the skills to attain a native-like accent in a second language and they also have particular cognitive benefits, for instance, their academic power is not specific and they are more daring and floppy in having to deal with innovative activities. While the grown-ups have two benefits which prevail over the ones the children have. Firstly, it is assumed that as the grown-ups have a larger vocabulary, they do not have to learn a large amount of new ‘concepts’ in the second language as kids do, but just ‘the new verbal symbols representing this concept’. Secondly, their capability to deliberately overview the grammatical rules and then utilize them in paradigms is presumed as an advantage as Krashen advocates (Ausubel, 1964 cited in Harley, 1986).

Moreover, by increasing your knowledge of L1, you are then encouraged to improve your capacity to cope with language generally, assuming that adults can gain knowledge on phonology, syntax and semantics quicker than children but with the limitation that the learning approaches that were applied in L1 learning, will cease to be accessible to the adult learner of the L2. Therefore,

she claims, the best phase for acquiring the L2 phonology is the period of seven to eight years old after the beginning of the L1 reading, whilst the teenagers might be able to acquire syntax and grown-ups concentrate more on vocabulary (Ervin-Tripp, 1974, cited in Harley, 1986).

In contrast with Ervin-Tripp who talks about the ‘positive transfer’ of the L1 learning approaches to the L2, Zobl (1983, cited in Harley, 1986) proposes that children might transfer these L1 learning approaches to L2, negatively. According to studies that have been made about L1 learning, he supposes that in the age 2-1/2 to 9 there is a phase of ‘syntactic conservatism’ which might impede with the capacity to create word order sentences in the L2 that varies from the L1. Once this period of time passes, it is advocated that there is a newborn elasticity in creating strategies which allows the L2 student to deal with the word order variations sufficiently.

The above assumptions without a doubt foresee that the ‘cognitive maturity’ of teenagers and grown-ups and their knowledge in L1 will provide them with a benefit larger than that of the one kids have, in some types of L2 production(Harley,1986).

In contrast to what has been already mentioned, as stated by Birdsong Schaie & Willis (1991,cited in Birdsong 1998) since greatest competence weakens with age of early attainment, some of the ‘cognitive mechanisms’ must get worse as well and there are surveys that have been made during the years that show this decline. For example, ‘in a paired-associated task (like vocabulary acquisition),

older learners were more sensitive to timing factors in the presentation of the material and required longer intervals than younger learners to recall the same pairs' (Craik,1986, cited in Birdsong,1999:172). Apart from that, grown-ups were more careful and if they were not certain about an answer they did not offer one (Birkhil & Schaic, 1975, cited in Birdsong, 1999). In addition to that, the grown-up students needed more time during the training period for creating 'long term memory'. They also wanted more experiments to acquire the list (Rabinowitz & Craik, 1986, cited in Birdsong, 1999). Besides, throughout the years it has been observed that the older learners capacity to remember detailed information is deteriorated and they usually memorize the general idea (Hultsch & Dixon, 1990, cited in Birdsong, 1999). The above capabilities are associated to the acquisition and usage of language, thus their weakening will negatively influence the capacity to study a new language (Birdsong, 1999).

The Social Basis for Age Differences

As Schumann (1978) states, social and affective factors are 'the most casual variable' as far as the learning of the L2 is concerned (cited in Harley 1986). He also claims that, only when the students are integrated in the target culture, they will manage to learn the L2. The most important element of that is the communal and mental communication with people from the second language. If the learners are remote from the people of the second language, then they will produce an abridged and easy language because of the cognitive limits (Schumann, 1978, cited in Harley, 1986). A nice example that indicates that is in the case with 'immigrant' families. Usually in a situation like that the

parents worry about how to improve their language abilities so that they can sustain their family and job whereas the kid is more worried about building up their models of companionship with kids from the second language environment. Apart from that, in order for the kid to be recognized by their classmates they have to acquire the second language (Smythe, 1975, cited in Harley, 1986).

The Development of Oral Skills According to Age

It is argued that the grown-up students seem to be better in ‘L2 syntax, morphology and other literacy skills, such as vocabulary and reading comprehension’ and this is because of their better cognitive development. But, the grown-up students do not seem to have benefited in the field of pronunciation and oral fluency as these are supposed to be ‘the least cognitively demanding aspects of both L1 and L2 proficiency’ (Cummins,1980:180;Cummins & Swain,1986:88, cited in Mayo and Lecumberri,2003:164). And as Cummins (1981:133, cited in Mayo and Lecumberri, 2003:162) claims, ‘interpersonal communicative skills are less sensitive to individual cognitive skills and to academic development’.

On the other hand, further reviews indicate that the grown-up students have benefits in the field that have been earlier mentioned, with only temporary experience (Mayo and Lecumberri, 2003). For instance, as Ervin-Tripp (1974,cited in Mayo and Lecumberri 2003) stated, following training for 9 months, a group of students with the age 7-9 did better in comprehension

imitation and discussion than a group of 4-6 years old. As Fathman (1975, cited in Mayo and Lecumberri 2003) discovered that students of the age 11-15 years achieved a better outcome in articulation than student of 6-10 years. This happened in the first years, while, soon after three years, the younger group passed the older. Similarly, the survey by Snow and Hoefnagel-Hohle (1978, cited in Mayo and Lecumberri 2003) showed that initially the grown-up students were more advanced than children in comprehension and articulation but after 12 months children became equal to them. So the results of these surveys show that grown-up students have higher speed of learning at the beginning of training.

Nevertheless, students who started learning a language young and were exposed to it to a great extent had better outcome in communicative skills. Namely, as Ekstrand (1977, cited in Mayo and Lecumberri,2003) found from his survey, the only variable on which migrant children did better than grown-ups was the 'oral production' (cited in Mayo and Lecumberri, 2003:163). Apart from that Oyama (1976,cited in Mayo and Lecumberi 2003) examined that migrant children achieved better marks on 'productive phonology' than the grown-ups and in an afterward survey he stated that children had also better marks on 'listening comprehension' examinations. Asher and Garcia's (1969, cited in Mayo and Lecumberri 2003) survey indicated as well that the migrant children had a great chance of accomplishing an articulation close to the original one (English) especially if they would have extended their reside.

As far as the pronunciation is concerned, Long (1990, cited in Birdsong, 1999) presumed from a study, is that in case someone starts studying the L2 at the age of 6, they tend to speak it with no pronunciation, but people that start later than the age of 12, they will have a foreign pronunciation. Although those people who are very much stimulated despite the fact that they start studying the L2 at an age that is believed to be the last part of the critical period, they manage to speak the L2 with no foreign pronunciation at all (Bongaerts, Planker and Schils, 1995, cited in Birdsong, 1999).

In accordance with the 'unfolding hypothesis' the foreign pronunciation is the result of a preceding phonetic growth (Oyama, 1979, cited in Birdsong, 1999). In other words, the 'unfolding hypothesis' expects that when someone starts studying the L2 and at that time they have already a very extended L1 phonetic system, then they will have a more foreign L2 pronunciation (Birdsong, 1999). The interaction hypothesis expects that deficiency of the L1 or its decrease through abandonment (Grosjean, 1982; Romaine, 1995, cited in Birdsong, 1999) might lessen the amount of foreign pronunciation in the L2. So according to Dunkel (1948) 'the less L1 there is, the smaller will be its influence on the pronunciation of an L2' (cited in Birdsong, 1999:106).

Age in Morphological Acquisition

The 'natural order' or 'natural sequence' of the learning of the grammatical order, introduced by Krashen (1977, cited in Munoz 2006) has a particular function in the studies of the learning of the grammatical morphology in

English as a second language. This order was a consequent of correct sequence that the students used to create English grammatical morphemes.

As Krashen (1977, cited in Munoz, 2006) supports, the ‘natural sequence’ is not influenced by the age of the students and actually this ‘natural order’ was created by a mixed group which included by students of dissimilar ages.

Fathman (1975, cited in Munoz, 2006) presented a study of the association among age, rate and sequence of learning of English structures. In her investigation 140 students participated who were in the United States for approximately three years and who were absorbed in the spoken school setting. These students were separated in age groups, the one from 6-10 years old and the other one from 11-15. The purpose was to find differences between the groups ‘in the rate and in the order of acquisition of 20 morpheme categories or syntactic patterns’. The findings showed that the older group was superior in creating correct morphological and syntactic forms whereas the younger group had better results in pronunciation.

In a following survey, Krashen *et al.* (1976, cited in Munoz, 2006) examined more the dissimilarities associated with age regarding the order of learning. He gave an identical test to that that Fathman utilized. ‘The correlation coefficient between the group of children and ranging in age 6-14 and the group of adults was highly significant’ (Munoz, 2006:113).

Apart from that, Larsen-Freeman (1975, cited in Munoz, 2006) discovered important associations among the morpheme sequences from two verbal assignments of a group of grown-ups and the morpheme sequence from children attained by Dulay and Burt (1974, cited in Munoz, 2006).

Consequently, the surveys related to morpheme have concluded that there is not a significant variation in the mode that the L2 develops after a specific maturation stage (Singleton & Ryan, 2004, cited in Munoz, 2006).

Vocabulary Acquisition According to Age

Vocabulary learning according to the age factor has not been given much consideration (Singleton, 1995, cited in Munoz, 2006) as most of the surveys focus on phonology and morphology. One of the reasons might be the fact that very small amount of lexis is learned deliberately and that it is generally supported that most of the lexis amount in both the L1 and L2 is learned incidentally (Hulstijn, 2003, cited in Munoz, 2006).

The reason for this originated from the neurolinguistic domain. Some facts propose that role of semantic is neurologically dissimilar from the one of the grammar (Neville&Lawson, 1992, cited in Munoz, 2006) and the age affect that too (Munoz, 2006). Paradis (1994:398, cited in Munoz, 2006:90) also says that ‘patterns of cortical organization associated with the processing of morphosyntax are altered as a function of age of acquisition to a greater extent than those associated with the processing of vocabulary’. In addition to that

Fabbro (2002, cited in Munoz, 2006) concluded by examining some surveys that indicate that apart from the age of learning, the L1 and L2 word lists are depicted in the same brain part.

The majority of the surveys show that children do not have the same good results as adults do temporarily (Munoz, 2006). The study by Snow and Hoefnagel-Hohle with speakers of Dutch who were learning English as foreign language and took the Peabody Picture Vocabulary Test (Dunn,1959 ,cited in Munoz ,2006) indicated that the teenagers and grown-ups did better than the children (Snow, 1983; Snow & Hoefnagel-Hohle, 1978, cited in Munoz, 2006). Cummins and Swain (1986 ,cited in Munoz,2006) discovered that adults an interesting situation in Canada manage to learn more lexis than children and both groups had equal time to do that.

Nonetheless, some studies indicated that children in the long-term will possibly pass the adults in score (Hyltenstam, 1992; Magiste, 1987, cited in Munoz, 2006). But Burstall *et al.* (1974, cited in Munoz) showed that if someone begins learning young this does not mean that they will have a better outcome in the long-run and she defending that by saying that children of 8 years old who were learning French did not show significant improvement by the age of 16.

Implications for my professional context

According to the Ministry of Education in my country, Cyprus, children who go to public schools, start to learn English as a foreign language in school when they are at the fifth grade of primary school, namely, at the age of 10-11. But as a child I started learning English when I was 9 years old, as there was a trend, which still exists, for parents to send their children to private lessons at an earlier age, as it is generally believed that the earlier a child learns a language the better they can learn it.

During my very early stage of learning in class, at the age of 9-11 we were studying simple words and simple grammatical rules. The teacher used to focus mainly on exercises related to grammar. For this there is a fear according to what Zolb (1983, cited in Harley) suggested about ‘syntactic conservatism’ along with which children of this age form word order sentences in L2 that are similar to the ones in the L1. In other words, they mix the two languages in terms of syntax. As far as speaking in class is concerned, it was very little, something that proved to be a disadvantage for the students, as according to studies that have already been stated above, students who started a language early have better results in communicative skills than the adults (Ekstrand, 1977; Oyama, 1976, cited in Mayo and Lecumberri, 2003) and speak the language without accent (Long, 1990, cited in Birdsong, 1999). Then, at an intermediate level, at the age of 11-13, when there was still some chance for the students to acquire a native-like accent, again the emphasis was mainly on grammar and vocabulary as well as on some reading and writing. Lastly, for

the period of the advance level, at the ages of 13-15 the center of the teaching was on more difficult tasks, concerning more complicated topics than before which we had to analyze in writing and with discussion with the teacher and with our classmates.

As a teacher of English to adult learners, I had a fear that they might not have similar abilities to the ones young learners have in order to attain the L2, since it is generally believed that the earlier a child starts learning a foreign language the better they will learn it. Besides, according to Penfield (Penfield&Rogerts, 1959, cited in Harley, 1986), as mentioned earlier, children are benefited by the neurological factor to learn the basic group of elements of the language better than the grown-ups. But that does not mean that the older learners can not learn the language as well as children do.

In fact if we bear in mind the studies that have been carried out and which are mentioned above, we can conclude that both group of learners (young and old) will manage to learn a foreign language successfully because each group has different abilities that enable them to acquire the language. For that reason the teachers, according to the kind of students they have in front of them, they should follow the appropriate approaches during their teaching, in order to make it as thriving as possible.

As far as the young learners are concerned, it has been supported that due to their ‘implicit language learning mechanisms’, they can manage a proficiency level, ‘but these mechanisms require massive exposure to the language, the

level of exposure that children learning their mother language’(De Keyser, 2000, cited in Mayo and Lecumberri, 2003). Apart from that, since they have the aptitude to achieve a native-like accent in the second language (Ausubel,1964, cited in Harley, 1986) we as teachers should promote their aptitudes in order to help them fulfill this accent. This can be realized if the teachers use only the L2 for their teaching in order for the learners to listen and acquire the correct sounds of the language.

Concerning the older learners, the fact that they are more cognitively matured, allows them to be better than the young learners in some types of the L2, namely, in the morphological and syntactic forms (Fathman, 1975, cited in Munoz, 2006) and in the vocabulary (Ervin-Tripp, 1974, cited in Harley, 1986). So we should concentrate more on grammar and vocabulary exercises at this stage of age to take advantage of these particular capacities that students have at this age. Apart from that we should involve them in group-work activities as in this way they will be obliged to practice their speaking skills.

Conclusion

Concluding, children are indeed benefited from the innate capacities they have to learn a foreign language and many times are better than the older learners in the long-term. But the studies that have been already mentioned indicated that the older learners have the potentials to reach a proficiency level in a foreign language and they proved that it is not so important after all to start learning a foreign language at a very early age. In other words both young and old

learners have different abilities that facilitate them in learning a foreign language. So if teachers give the necessary importance to the students during class and organize the lesson according to their needs and potentials, their motivation for learning the language will increase and they will manage to attain a proficiency level, no matter what their age is.

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**A BRIEF GUIDE AND APPRAISAL OF ONLINE EDUCATION
SYSTEMS, THE IMPLEMENTATION AND ITS FUTURE IN THE
CYPRUS EDUCATIONAL COMMUNITY**

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Abstract

This article is based on literature review and personal experiences in the use of, benefits and obstacles of applying technology in the field of education. For the purpose of this article I have visited the websites of higher educational institutes of Cyprus, and a short comparison list can be found toward the end of this guide. The purpose of this article and this research was not to “invent the wheel” and provide solutions toward the problems and the challenges that an institution will face toward it attempt to develop it electronic education technology, but at the title advise to introduce the reader to the world of online education and discuss the present and the future of such technologies in the Cyprus higher educational system.

Online Education: Terms and definitions

At first we should start by explaining what Online Education is, a very ambiguous and diverse term which is often use not only in the educational and training field but in other areas as well. There are also several other terms similar and related to Online Education that we often use, such as e-learning, virtual education, distance learning, internet based education and education via computer-mediated communication (CMC). Let's have a look on the most frequently use terms and their definition.

Online Education

Desmond Keegan's (1988) was one of the firsts who have successfully attempt to set a complete and proper framework for this term. Based on his bellow definition, distance or online education is characterized by:

- the separation of teachers and learners which distinguishes it from face-to-face education,
- the influence of an educational organization which distinguishes it from self-study and private tutoring,
- the use of a computer network to present and distribute some educational content,
- the provision of two-way communication via a computer network so that students may benefit from communication with each other, teachers, and staff.

Another term that we often use as a more generic term and as a synonym for online education is the term e-learning, but this is a mistake since the term e-learning is not very precise, and it should be pointed out that learning is just one element of education. E-learning is usually focus on course content, while online education institutions as we are going to discuss later on, cover a much broader range of educational services. Therefore, the term online education covers a much broader range of services than the term e-learning and it is preferable to use that term.

Kaplan-Leiserson has developed an online e-learning glossary, which provides the bellow definition as regard as the term of e-learning is concern:

E-learning

E-learning covers a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio and videotape, satellite broadcast, interactive TV, and CD-ROM.

In simple words, e-learning is the process of educating others through the use of technology.

Computer-based learning

Computer-based learning, sometimes abbreviated to CBL, refers to the use of computers as a key component of the educational environment. While this can

refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes. The concept is generally seen as being distinct from the use of computers in ways where learning is at least a peripheral element of the experience (e.g. computer games and web browsing).

Computer-Based Training

Computer-Based Trainings (CBTs) are self-paced learning activities accessible via a computer or handheld device. CBTs typically present content in a linear fashion, much like reading an online book or manual. For this reason they are often used to teach static processes, such as using software or completing mathematical equations. The term Computer-Based Training is often used interchangeably with Web-based training (WBT) with the primary difference being the delivery method. Where CBTs are typically delivered via CD-ROM, WBTs are delivered via the Internet using a web browser such as Internet Explorer or Firefox. Assessing learning in a CBT usually comes in the form of multiple choice questions, or other assessments that can be easily scored by a computer such as drag-and-drop, radial button, simulation or other interactive means. Assessments are easily scored and recorded via online software, providing immediate end-user feedback and completion status. Users are often able to print completion records in the form of certificates.

CBTs provide learning stimulus beyond traditional learning methodology from textbook, manual, or classroom-based instruction. For example, CBTs offer user-friendly solutions for satisfying continuing education requirements.

Instead of limiting students to attending courses or reading printing manuals, students are able to acquire knowledge and skills through methods that are much more conducive to individual learning preferences. For example, CBTs offer visual learning benefits through animation or video, not typically offered by any other means.

CBTs can be a good alternative to printed learning materials since rich media, including videos or animations, can easily be embedded to enhance the learning. Another advantage to CBTs are that they can be easily distributed to a wide audience at a relatively low cost once the initial development is completed.

However, CBTs pose some learning challenges as well. Typically the creation of effective CBTs requires enormous resources. The software for developing CBTs (such as Flash or Adobe Director) is often more complex than a subject matter expert or teacher is able to use. In addition, the lack of human interaction can limit both the type of content that can be presented as well as the type of assessment that can be performed. Many learning organizations are beginning to use smaller CBT/WBT activities as part of a broader online learning program which may include online discussion or other interactive elements.

Computer Supported Collaborative Learning (CSCL)

CSCL focuses on socially oriented theories of learning using computer technologies to support collaborative methods of instruction. Is characterized as one of the most promising innovations to improve teaching and learning with the help of modern information and communication technology. Most

recent developments in CSCL have been called E-Learning 2.0, but the concept of collaborative or group learning whereby instructional methods are designed to encourage or require students to work together on learning tasks has existed much longer. It is widely agreed to distinguish collaborative learning from the traditional 'direct transfer' model in which the instructor is assumed to be the distributor of knowledge and skills, which is often given the neologism E-Learning 1.0, even though this direct transfer method most accurately reflects Computer-Based Learning systems (CBL).

Other Important Terms:

Instructional design

Is characterized by a systematic and reflective process of applying principles of learning and instruction to develop instructional materials, activities, information resources, and evaluation.

Mobile learning (m-learning)

The term m-learning is derived from the term e-learning. It is a form of online learning that can take place anytime, anywhere with the help of a mobile computer device. The device must be capable of presenting learning content and providing wireless two-way communication between teacher(s) and student(s).

Types of Distance Learning: Synchronous VS Asynchronous

There are two distance education delivery system categories - synchronous and asynchronous. **Synchronous** instruction requires the simultaneous participation

of all students and instructors. The advantage of synchronous instruction is that interaction is done in "real time" and has immediacy. Examples include interactive telecourses, teleconferencing and web conferencing, and Internet chats.

Asynchronous instruction does not require the simultaneous participation of all students and instructors. Students do not need to be gathered together in the same location at the same time. Rather, students may choose their own instructional time frame and interact with the learning materials and instructor according to their schedules. Asynchronous instruction is more flexible than synchronous instruction, but experience shows that time limits are necessary to maintain focus and participation. The self-paced format accommodates multiple learning levels and schedules. Examples of asynchronous delivery include e-mail, audiocassette courses, videotaped courses, correspondence courses, and WWW-based courses.

Advantages and Disadvantages of Online Learning

Never before in the training world have so many delivery choices, information and knowledge to transmit to our trainees. Thanks to the internet we have tremendous potentials for the rapid dissemination of knowledge and information worldwide, and a lower cost. Am sure that if I someone ask you to discuss the advantages and disadvantages of online learning, you will be able to describe more advantages rather than disadvantages. And based on this literature study, this is the case since there have been more advantages rather than disadvantages. And the disadvantages were minor compared with the

advantages. Most of them were of technical aspect that can be easily overcome with the rapid progress of technology. Although it is a rich source of knowledge, online education is not for everyone since there are both advantages and disadvantages of online courses.

Lets take as an example the case of the Nordic countries. The five Nordic countries of Denmark, Finland, Norway and Sweden with a total population of 23 million and one of the wealthiest economy has severe problems and barriers on their very promising and carefully design online education project. Someone might wonder why this has happened since those countries are well known for their interaction of technology and they have a population recognized as highly computer educated. Based on the eEurope Benchmarking program those countries has the highest internet access in Europe.

Advantages of Online Learning

Accessibility: Online courses are a form of distance learning. The courses are portable and available where you are. You don't have to go somewhere to take the course; it comes to you. You can access an online course at the time and place that is most convenient to you.

Flexibility: Another advantage of online learning is that you can go at your own pace and work when it make sense for you. Whether your busy schedule leaves you little time for learning, or you need more time to learn a particular concept, or you want to accelerate through the material, online learning offers the flexibility you need. There are few or no set times that you have to be on

your computer, so you can work the class around your schedule, instead of having to work your schedule around the class. This is great for people in the working world who want to fit education into their lives, and great for traditionally aged college who work long hours to pay their way through school. It's also helpful for parents, especially those with small children. Also, if you're someone like me who has trouble getting up for morning classes because you prefer to study during the nights, the time flexibility may be a big help. Typically, online courses are structured for adult learning. That makes it easier for most people to learn the material and helps you apply the material in the real world. You learn what you need to know when you need to know it.

Cost: An online education does not require that you relocate to a new place or that you stop from your work. Online courses are usually more affordable than traditional courses. Not only are the course fees often lower, but you also don't have transportation costs to figure into the mix. Inexpensive worldwide distribution - No separate or distinct distribution mechanism is needed (i.e., distributing CD-ROMs for CBT training). WBT can be accessed from any computer anywhere in the world while at the same time keeping delivery costs down.

Documentation: Documents, transcripts, live discussions and training materials are all archived and recorded so that they can be retrieved via mail, e-mail or the school's website for reading, downloading, and printing. Students don't have to take notes. And this is important for students who had difficulties

in collecting good notes during the lecture since with an online course, the "lecture" is written out.

Online Education is beneficiary not only for the students but also for the lecturers and the other academic staff since it can automate several consuming procedures in term of money and time.

Ease of Instructors: Instructors are also available, respond quickly through email, and generally are prepared to work with diverse students with a range of lifestyles and needs.

Ease of content update: The changes that an instructor makes to the content are immediately available to the learning audience across the world and with a lowest cost than any other traditional method such as books and CD-ROM.

Access is controllable: You can direct and monitor who receives web training - when, how many times, and in what sequence. This weblogs can help the lecturer to identify the students response and act accordantly. Though the history logs you can monitor the progress of each student and adjust his assessment based on his progress throughout the semester.

Saving in term of money and time: When I was a student I remember that the college has to bring the available number of courses so that we can make our schedule for the forthcoming semester. That was a big waste of paper, but now the students can find the available courses electronically and they can even register themselves in those courses. The saving in printing is expanded in

other publications such as in the lecturer notes, class and home exercises, anniversary announcement, etc).

The University of Nicosia offer to it student the ability to pay the courses online through a secure JCC transaction, saving it staff from valuable time.

There are applications similar to the technical forums that we all know where the students can exchange ideas and assist each other in solving a problem.

All the institutions are proving an email account to it student, making it easier for the lecturers and the institution to inform it students. Even more, the students can redirect the messages to their own personal email account and in the future the university can use those email addresses and built a strong and active alumni community.

Disadvantages of Online Learning

Online education is so portable and flexible for so many people that it's easy to miss the disadvantages. If online education were the best choice for every person every time, we wouldn't need to go to the classes and everything would have been history by now. On my personal opinion we can say that the disadvantages of online learning fall within three factors: Personal, Technical and Operational.

Personal Factors include:

Discipline and time management skills are mandatory. With few time constraints other than deadlines, online course students are fully responsible for sticking to their own schedule. If you are someone who procrastinates too much and has trouble managing your time, an online course may be a disaster

for you. In order to succeed at online learning, you have to have some specific skills. You have to be self-motivated, responsible for your own learning and have good time management skills. If you don't have those skills, traditional classes may be a better choice for you.

Lack of direct interaction with the instructor. Most of your communication will be through email. You might miss the sound of an instructor or peer's voice. Some students prefer this, or don't find it to be a problem. But many students thrive from face-to-face interaction and attention from professors and may not do well without that interaction.

Isolation from the college life. The universities and other educational institutes has developed their own culture where you can learn and you develop several other skills that you cannot learn through the online learning. I have to admit that my life at the university has changed my way of thinking. It made me a more responsible and mature person, I have to learn how to cooperate and succeed with others, and as a result some of my best friends are from my studies. The fact that you meet other people, mostly internationals, and the challenge of living in another country is a lesson that cannot be replaced through the electronic learning. Is not only the knowledge that you get, is the whole package. The online environment is very lonely. Where is the challenge and the motivation? Ideally, classroom settings can become welcoming communities, and it's harder (although not impossible) to replicate that online. In my case a traditional classroom would had been better for me for my first degree.

Technical:

Gary James on his article for e-learning is mostly concerned on the technical difficulties, but on our days, 8 years later this article most of his concerned has been vanished by the progress of technology. A summary of some of his most important worries is described bellow together with other disadvantages.

Bandwidth: In simple words, the term bandwidth is use to measure the amount of data that is send and received from your computer to the internet or to the network in general. The higher the bandwidth the faster you will be able to download and view the online context. This is a big constrain if your content relies on multimedia elements such as video, sound and intense graphic. Your audience might not be patient enough to wait for the material to be downloaded, the connection might time out, the synchronization of the image with the sound will be a disaster and the whole process will be painful for the user. In the last three years we have been benefited from higher internet speed at a lower cost and this obstacle is no longer an important barrier for most of us. Still this is a barrier that exist some other countries of Asia, Middle East and Africa.

System Compatibility: Most system provide backward and forward compatibility with other systems and versions, so I would consider this a problem any longer. However due to the several number of web browsers that exists (Internet Explorer, Firefox, Opera, Google Chrome, Safari, etc) we

should make sure that our system is compatible and that it appears correctly on the above browsers.

Cost and Availability of Equipment. A problem that is expressed by the author is that the technology in terms of infrastructure and hardware might not be available to some people. But Technology has become so essential on our days that there is a large availability of resources from several manufacturers at competitive prices. There are several projects running by local governments and other bodies such as the One Laptop per Child Project (OLPC), initiated in 2002 by MIT Professor Nicholas Negroponte and has provided more than 1,5 million laptops to kids from developing nations. Other developed nations such as the government of Cyprus, sponsor with 300 Euros the purchase of a laptop. The mission statement of the OLPC is an indication on the role of technology and online learning, not only in education but in the improvement of people's life as well:

To create educational opportunities for the world's poorest children by providing each child with a rugged, low-cost, low-power, connected laptop with content and software designed for collaborative, joyful, self-empowered learning. When children have access to this type of tool they get engaged in their own education. They learn, share, create, and collaborate. They become connected to each other, to the world and to a brighter future.

Access to and knowledge of technology is required. You don't have to have a computer science background to take these classes, but you do need to be computer literate and comfortable with technology. You also need reliable

access to a decent computer system and probably a high speed connection. If computers aren't your thing, maybe the traditional classroom would suit you better.

The biggest and most important barrier for the collaboration of online education is what the Scandinavian countries has experience. The legislation and the incompatibility of the courses.

Legislation

Governmental slowness and bureaucratic indecisiveness may make it difficult for formal programs to compete in a global, online education market in which timing and development time may be crucial. One of the project partners experienced that it took two years to obtain a formal accreditation for an online master's program from the Ministry of Education.

From the website of the Ministry of Education in Cyprus, it was not possible to locate the legislation regarding the online education, but it seems that the same principle of Article 41 (I) 1993 with the traditional courses and education institutes remains. That only the courses and the institutions have been inspected by the local Ministry of education and that they are authorized to offer certificates otherwise are not recognized. Therefore for a course to be accredited the Ministry of Education has to inspect and verify the course. In the case that the degree is from another country, then the local Ministry of education is responsible for inspecting and verifying the validity of the course.

I believe that the strength of your diploma is critical for your future employment. Information about the institution accreditation and, if needed, copies of syllabi and sample assignments are now being requested by the employers due to the large number of people with diplomas.

Compatibility of Courses

Even though there is ongoing harmonization of degrees, credits, and grades in Europe and in the States, there is still a significant lack of educational harmonization even between the Scandinavian countries, where the most promising project for online education recently took place and had made collaboration difficult.

As you understand credits may be difficult to transfer. If you are planning to transfer your online course into an existing or future program of study, be very careful. Before taking the class, contact the institute and get a definite answer about whether this class will transfer. Research online courses and degrees carefully! Make sure the course is from an accredited institution and verify this with your local Ministry of education.

Now in Europe the European Credit Transfer and Accumulation System (ECTS), has helped so that *“teaching and learning become more transparent and has help to facilitates the recognition of studies (formal, non-formal and informal). The system is used across Europe for credit transfer (student mobility) and credit accumulation (learning paths towards a degree). It also informs curriculum design and quality assurance”*.

Student assessment and feedback is limited. During the early phases of online education this was a big challenge that the pioneers of the field has experience mainly because of the issues that we have discussed above (e.g. access to the internet and technology, computer knowledge, limited bandwidth, system incompatibility between the different platforms, etc).

On our days, going through the various Learning Management Systems (more information regarding the role and the purpose of those systems are followed in the net pages) I was surprised and pleased to see the number of utilities that exist to assist and monitor the progress of the students.

Personally I have been using the internet and technology to facilitate my educational duties. Through the creation of a simple website I provide information regarding the course, the students can download my notes, past paper, a large number of exercise, tutorials, links to useful websites for further educational material and website where they can download freeware and shareware applications, important announcements and solved exercises. All of the assignments are send by my students in electronic form. Not only is easier and more economically but through the use of email is possible to provide written feedback to the student until he or she does all the necessary changes. I have found this to work for the benefit of my students, even though the need for traditional support and feedback is always required.

Learning Systems

There are a number of systems to develop complete online education under various categories. The most important are presented in the bellow section.

Learning management system (LMS)

The best definition that we may use to describe LMS is the one provided by Ellis 2009, that “is a software application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content”.

A good LMS should be able to provide the following functions:

- Assemble and deliver learning content rapidly
- Centralize and automate administration of users, roles, courses, instructors, facilities, and reports
- Communication tools such as emails, student messaging, web blogs, notifications boards, etc
- Consolidate training initiatives on a scalable web-based platform
- Display scores and transcripts
- Integration with performance tracking and management systems
- Personalize content and enable knowledge reuse.
- Planning tools to identify skill gaps at departmental and individual level
- Student Assessment and Grading
- Support portability and standards
- Use self-service and self-guided services such as Autoenrollment

Integration with HR. LMSs that aren't synchronized with HR systems miss the boat. When systems are integrated, a human resources employee can enter a new hire's information into the HR system, and the employee is automatically signed up for training tailored to his or her role within the company.

Administration tools. The LMS must enable administrators to manage user registrations and profiles, define roles, set curricula, chart certification paths, assign tutors, author courses, manage content, and administer internal budgets, user payments, and chargebacks. Administrators need complete access to the training database, enabling them to create standard and customized reports on individual and group performance. Reports should be scalable to include the entire workforce. The system should also be able to build schedules for learners, instructors, and classrooms. Most important, all features should be manageable using automated, user-friendly interfaces.

In addition, the system should be able to identify employees who need a particular course and tell them how it fits into their overall career path, when it's available, how it's available (classroom, online, CD-ROM), if there are prerequisites, and when and how they can fulfill those prerequisites. Once learners complete a course, the LMS can administer tests based on proficiency requirements, report test results, and recommend next steps. In that capacity, LMSs are instrumental in assuring that organizations meet rigid certification requirements in such vertical markets as healthcare, finance, and government.

- **Content access.** This involves the medium (e.g., classroom, CD-ROM, online, etc.) in which the content is delivered, the method (e.g., instructor-led, selfpaced, blended) in which the content is delivered, the languages in which the content is delivered and to whom the content is being delivered (e.g., employees, customers, partners, etc.).
- **Content development.** Content development encompasses authoring, maintaining, and storing the learning content. This is where the issues of authoring-tool compatibility, version control, and re-usable learning objects are considered.
- **Content integration.** It's important for an LMS to provide native support to a wide range of third-party courseware. When shopping for an LMS, keep in mind that some LMSs are compatible only with the supplier's own courseware, and others do little more than pay lip-service to learning content standards. An LMS supplier should be able to certify that third-party content will work within their system, and accessing courses should be as easy as using a drop-down menu.
- **Skills management.** Skill assessment and management capabilities revolve around learners assessing their competency gaps. Skills assessments can be culled from multiple sources, including peer reviews and 360-feedback tools. Managers must be able to determine whether results are weighted, averaged, or compared to determine a skill gap. Businesses also might use this feature to search their employee base for specialized skills.
- **Assessment capabilities.** It's a good idea to have an assessment feature that enables authoring within the product and includes assessments as

part of each course. Evaluation, testing, and assessment engines help developers build a program that becomes more valuable over time.

- **Adherence to standards.** An LMS should attempt to support standards, such as SCORM. Support for standards means that the LMS can import and manage content and courseware that complies with standards regardless of the authoring system that produced it. Beware: Unless the supplier certifies that the content will work on your LMS, plan on additional expenses.
- **Configurability.** If an organization needs to completely re-engineer its internal processes to install an LMS or employ expensive programming resources to make changes to the LMS, then it's probably not a good fit. Also, it's helpful if IT and designers can access the LMS behind the scenes; they need to set processes and standards based on company policy. To make some systems IT and user-friendly, some LMS providers have user groups or customer advisory councils that provide insight into installing or upgrading systems.
- **Security.** Security is a priority in any data system containing employee information and proprietary content. Security measures typically include passwords and encryption.

For the purpose of this article I went through some of the most popular Learning Systems and a short summary of their feature is presented bellow.

Blackboard <http://www.blackboard.com/>

The Blackboard Learning System is a Web-based server software platform. Features include course management, a customizable open architecture, and a scalable design that allows for integration with student information systems and authentication protocols. It may be installed on local servers or hosted by Blackboard ASP Solutions. Its main purposes are to add online elements to courses traditionally delivered face-to-face and to develop completely online courses with few or no face-to-face meetings.

Blackboard software is used by over 3700 education institutions in more than 60 countries including the University of Cyprus and is the leading provider of educational software for K-12, professional education and higher education.

Blackboard and Dell have worked together to provide a hardware and software deployment solution that implements this Scalable Reference Architecture across multiple nodes. This multi-node implementation features software components from Blackboard, hardware components from Dell and database components from Oracle. Blackboard applications provide clustering and load balancing features for building a scalable, reliable environment.

SharePointLMS

SharePointLMS was developed in 2007 to bring e-Learning into organizations and institutions that use the Microsoft Office SharePoint Server 2007 & WSS3.0 platform. SharePointLMS was designed as full blown LMS to provide vast e-Learning features for customers. In addition to the standard learning management systems features such as Chat, Discussion, Forum, Homework and Drop Box, SharePointLMS offers the new features like:

- Advanced documents management tool, which helps to create, edit, sort, store documents and create links to documents used in other document libraries
- Build-in authoring tools - quiz maker and Question Pool, which allows teacher not just create quizzes, but to keep a Pool of questions for future use in quizzes or exams
- Live conference tool to create a Virtual Interactive Classroom based on MS Communications Server
- Learning Path is the chosen route, taken by a learner through a range of (commonly) e-learning activities, which allows them to build knowledge progressively. This SharePointLMS feature provides the teachers with a tool to create the set of conditions to ensure students do not skip parts of the lesson
- GradeBook to record the grades of the students and issue course certificates if applicable

- Course Statistics, each course has a statistical report showing information such as the most active users, which areas / tools are used in the course. This can be filtered down to an individual student
- SharePointLMS comes with a build in Blackboard converter enabling users of Blackboard to reuse their existing course materials.

ILIAS

ILIAS is a powerful Open Source Learning Management System for developing and realising web-based e-learning. The software was developed to reduce the costs of using new media in education and further training and to ensure the maximum level of customer influence in the implementation of the software. ILIAS is published under the General Public Licence and free of charge.

- Course Management: ILIAS allows efficient creation of courses and course materials. It offers standardized tools and templates for the learning and working process including integrated navigation and administration.
- Groups and Collaboration: Groups in ILIAS allow cooperative learning and working on the platform without additional tools. Learning groups, working groups or groups for certain fields of interest could be created. Groups can use all ILIAS tools like wiki, forums or file sharing. Users can create groups that are open for everyone or have specially defined access restrictions, e.g. access with a password

- Learning Content: ILIAS offers multiple ways to deliver learning content. All types of document files can be uploaded. ILIAS includes also an internal authoring environment to create XML-based learning modules, that can include images, flash, applets and other web media files. It is possible to create glossaries and reuse term definitions within other learning modules and with several supported export formats.
- Communication: ILIAS supports standard ways of communication as chats, forums and mails. The personal desktop includes an awareness function, that shows users, that are currently online. ILIAS also sends information via RSS to the user and displays external RSS feeds in the system.
- Webcasting: Beside RSS support, ILIAS offers the ability to manage podcasts. To create a podcast is as easy as uploading a audio file to the web. The author decides whether items are available throuh the web, or within the LMS only.
- Online Surveys: In ILIAS you can use surveys to easily collect information from a large number of users, for example to evaluate courses or other events. ILIAS surveys are easy to create and administer, even for non-experienced users. With a sufficient basis of survey questions, teachers could create their own evaluations fast and efficient.

- Google Maps: A learning management system is a virtual meeting place for your teachers and learners. But in ILIAS users may also share their real locations to meet each other. ILIAS supports Google Maps for user profiles and adds maps of all members to groups and courses.
- Personal Desktop: Every user in ILIAS has his or her own Personal Desktop. It collects all resources, that are needed by the learning to fulfill the daily learning tasks. The personal desktop features News, Personal Messages, Learning Resources, Personal Notes, Bookmarks, External Web Feeds and other information. The learner can re-arrange these blocks of information according to his needs.
- Test & Assessment: ILIAS offers an integrated environment for the creation and enforcement of tests & assessments. This can be used for the monitoring of learning progress by the users as well as the tutors and examiners. ILIAS Test & Assessment supports multiple choice, single choice, allocation questions, cloze questions (free text, select box), ordering, matching, hot spot and more question types.
- Standard Compliance: ILIAS accomplish the e-learning-standard SCORM 1.2 and first of all open-source-LMS, it achieves the maximum conformance level LMS-RTE3. It also supports LOM metadata standard, AICC and IMS-QTI.
- Authentication: ILIAS supports a lot of different authentication methods: Standard Login/Password Authentication (Database), LDAP, Shibboleth, CAS, Radius and SOAP based Authentication.

- **SOAP Interface:** Today learning management systems are integrated into a larger environment of institutional administrative systems. To enable information exchange with these systems, ILIAS offers a SOAP interface, that allows to control almost everything in ILIAS with an external application.

Note that there are other open source programs that have nothing to be jealous of the commercial programs. One of them, Moodle is in use by the Cyprus Technological University and the European University.

Virtual Learning Environment

A virtual learning environment (VLE) is a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process. The terms virtual learning environment (VLE) and managed learning environment (MLE) are often interchanged and the main difference is that MLE is usually focus on management.

The principal components of a VLE package provides a collection of tolls such as curriculum mapping (breaking curriculum into sections that can be assigned and assessed), student tracking, online support for both teacher and student, electronic communication (e-mail, threaded discussions, chat, Web publishing), and Internet links to outside curriculum resources. New features in these systems include wikis, blogs, RSS and 3D virtual learning spaces. In general, VLE users are assigned either a teacher ID or a student ID. The teacher sees what a students sees, but the teacher has additional user rights to create or modify curriculum content and track student performance.

While originally created for distance education, VLEs are now most often used to supplement traditional face to face classroom activities, commonly known as Blended Learning. These systems usually run on servers, to serve the course to students Multimedia and/or web pages.

There are a number of commercial VLE software packages available, including Blackboard, WebCT, Lotus LearningSpace, and COSE.

Universities and other institutions of higher and further education are increasingly turning to VLEs in order to:

- Economize on the time of teaching staff, especially when they are also involved in research and administration. The extent of the economy over traditional "talk-and-chalk" teaching is not yet clear, but for instructors without web development expertise, using a VLE absorbs less time and produces a more professional result.
- Provide a service for students who increasingly look to the internet as the natural medium for finding information and resources.
- Ensure that quality control requirements are met by providing a standard vehicle for collecting the required information
- Facilitate the integration of distance and campus-based learning or of learning on different campuses.

A large number of accredited institutions offer online, on-demand teacher training courses for educators to earn graduate credit or masters degrees. In the European Union the institutions including the schools are being encouraged to

make use of learning platforms. The UK government has published an eStrategy outlining priorities that include every learner in schools having access to an online learning space and e-portfolio.

A VLE should make it possible for a course designer to present to students, through a single, consistent, and intuitive interface, all the components required for a course of education or training. Although logically it is not a requirement, in practice VLEs always make extensive use of computers and the Internet. A VLE should implement all the following elements:

- The syllabus for the course
- Administrative information including the location of sessions, details of pre-requisites and co-requisites, credit information, and how to get help
- A notice board for up-to-date course information
- Student registration and tracking facilities, if necessary with payment options
- Basic teaching materials. These may be the complete content of the course, if the VLE is being used in a distance learning context, or copies of visual aids used in lectures or other classes where it is being used to support a campus-based course.
- Additional resources, including reading materials, and links to outside resources in libraries and on the Internet.
- Self-assessment quizzes which can be scored automatically

- Formal assessment procedures
- Electronic communication support including e-mail, threaded discussions and a chat room, with or without a moderator
- Differential access rights for instructors and students
- Production of documentation and statistics on the course in the format required for institutional administration and quality control
- All these facilities should be capable of being hyperlinked together
- Easy authoring tools for creating the necessary documents including the insertion of hyperlinks - though it is acceptable (arguably, preferable) for the VLE to be designed allowing standard word processors or other office software to be used for authoring.

In addition, the VLE should be capable of supporting numerous courses, so that students and instructors in a given institution (and, indeed, across institutions) experience a consistent interface when moving from one course to another.

Two VLE and we have especially like are presented bellow:

DOKEOS - <http://www.dokeos.com>

Dokeos is a open source online learning suite. It claims to have more than 2 millions users. It provides all the features needed for e-learning and blended learning management: From Authoring to Reporting. The basic version come is

available for free, but you can pay the subscription and benefit from the additional features that the PRO or Medical edition is offering.

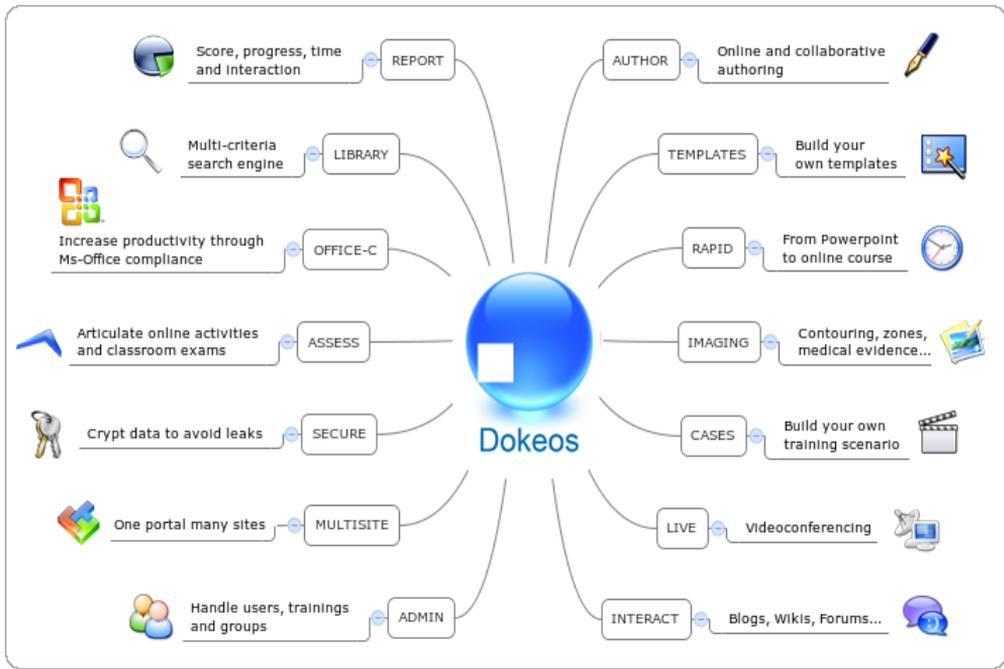
Moodle – <http://moodle.org/>

Moodle is a software package for producing Internet-based courses and web sites. It is a global development project designed to support a social constructionist framework of education.

Moodle is provided freely as Open Source software (under the GNU Public License). Basically this means Moodle is copyrighted, but that you have additional freedoms. You are allowed to copy, use and modify Moodle provided that you agree to: provide the source to others; not modify or remove the original license and copyrights, and apply this same license to any derivative work. Moodle can be run on Windows and Mac operating systems and many flavors of Linux.

The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment, which is mostly useful to programmers and education theorists.

One of the many things that we have loved in this application was the nice graphics and the language availability among them the Greek Language.



Use of Online Education in the Cyprus Institutes

For the purpose of this article I went through the websites of all higher education institutes of Cyprus, both public and private. I was glad to discover that the three public educational institutes and the private universities are using the power of technology to distribute knowledge, learning and support to their users. Most of them have an intranet where the students can access material from the lecturers such as the lecturer notes, assignments, past papers, presentations and other material. Through a secure connection, that requires a user name and a password they can have access to the college intranet. Some of the institutes are providing last minute information regarding the courses (such as if a lesson has been canceled due to the lecturer illness), grades, academic calendar, webmail, online registration and the flexibility of paying their courses online. A brief analysis for each website is listed below.

University of Cyprus

Website: <http://194.42.1.47/webct/entryPageIns.dowebct>

The University of Cyprus has adopted the commercial Blackboard Learning System (Enterprise) powered by SunGard Higher Education, a well known 500 fortune company that provides software and processing for financial services, higher education and the public sector. Based on what we have seen on the vendor website and the reviews that exists on the web through the white papers, the blackboard is a powerful and complete system. The system provides information regarding the courses and allow self-registration by the authorized users. The material is protected since only registered users have

access. The system provide webmail for the students, a banner web with information regarding the schedule of the courses, the reservation of classes, press report and other academic information as well as a FAQ.

Open University of Cyprus

Website: <http://eclass.ouc.ac.cy/>

OUC also provide it own online learning section, under the code name eclass built in the free open source Moodle that we have discussed before. I found the website to be simple and fast, with a nice aesthetic design and the information clearly listed and group. Due to our access limitations (guest) we are not in the position to know what tools and facilities but we know for sure that they have a blackboard for announcement, webmail, manuals, the course schedule, access to the library and a website where you may download free and useful software.

Cyprus University of technology

Website: <http://ecourses.cut.ac.cy/login/index.php>

A very simple and aesthetic website built in moodle. The CUT aims to become a leading electronic university where education and communication will take place through technologies that secure and support the operations of the University by proving valid information without any limitations upon the place or time.

University of Nicosia

Website: <http://www.studentintranet.unic.ac.cy/>

The University of Nicosia / Intercollege has been carrying out applied research in the area of on-line education since 1999. Students have access to on-line educational material through the Student Intranet. This means that they can view and print lecture notes, assignments and other important material through any personal computer. The on-line education section of the UN website is built on LAMS, a revolutionary new tool for designing, managing and delivering online collaborative learning activities. It provides teachers with a highly intuitive visual authoring environment for creating sequences of learning activities. These activities can include a range of individual tasks, small group work and whole class activities based on both content and collaboration.

What we have found unique on this system is the “Online Payment” that allows the students to transfer the payment fund securely using the web.

European University Cyprus

Website: <http://moodle.euc.ac.cy/>

As the URL suggest, the website of the EUC is also built on the popular Moodle. Further entry to the website requires authentication therefore I was unable to further review their website.

Frederic University

Website: <http://e-learning.frederick.ac.cy/>

Frederic University also has its own Learning Management System but it was not possible to name their LMS. But I was very surprised with the material and the other utilities that they have included on their website. Not only they provide access to the lecturer material, announcement board, access to your courses and online registration but several other functionalities such as library access, computing services, user support, clock, blog on the European union academic and event calendar, search forum and extranet access.

As a guest you can see the online users with their name and photos. Not sure if this is right since it might be a violation of the user privacy.

Other Educational Institutes In Cyprus – Colleges

Other Educational Institutes in Cyprus are using the internet but is mostly for advertising, as a basic method for communicating with the prospective students and they provide few information and limited download material. Few of those websites provides access to their intranet and to their webmail. And those that provide access, it is unknown if this is for the students or for the lecturers only. I have been informed that some of those colleges are in the process of upgrading their online presence and some of them are evaluating the possibility of developing Virtual Learning Educational Systems for administrative mostly purposes.

One of those institutes, the Cyprus Institute of Marketing recognizes the importance of Distance Learning and declares that *“Distance Learning is the future in Global Education and CIM(BVI) has been a pioneer for more than 15 years”* but we haven’t seen any material that can be use for the students.

I have visited the website of the bellow institutions and a list with the findings is presented bellow.

	Name	Website	Intranet	Webmail	other
1.	Alexander College	www.alexander.ac.cy			
2.	Americanos College	www.ac.ac.cy			
3.	CASA College	www.casacollege.ac.cy	√		
4.	CDA College	www.cdacollege.ac.cy			
5.	College of Tourism	www.cothm.ac.cy			
6.	CTL Eurocollege	http://ctleuro.ac.cy			
7.	Cyprus Institute of Marketing	www.cima.ac.cy			Offer distance learning courses
8.	Cyprus International Institute of Management	www.ciim.ac.cy	√	√	
9.	Global College	www.globalcollege.com.cy			
10.	KES College	www.kes.ac.cy	√		
11.	Lenia College	www.leniacollege.com/			

12.	PA College	www.pacollege.ac.cy		√	
13.	Philips College	www.philips.ac.cy		√	
14.	Rea College	www.reacollege.ac.cy	√		

Technology in Education at the schools

The European Union on its effort to become an advanced knowledge economy gave emphasis to E-learning as part of the EU Programme for Lifelong Learning 2007–2013. More specifically, the Lifelong Learning Programme supports actions by the Member States in order to exchange knowledge and ideas, promote cooperation and mobility between education and training systems within the Community in order to turn the European educational systems into a world quality reference.

The Ministry of Education and Culture of Cyprus with a continuous increase budget is participating with the following programs targeting 110.000 students and 13.000 lecturers

- Increasing the number of personal computers (PCs) in schools
- Whiteboards in all schools
- Internet for all schools
- Intranet between all schools
- Training teachers in ICT

- Use of multimedia in teaching through developing electronic content
- Implementation of a Learning Management System

The Implementation of a Learning Management System is supposed to finish within the year 2010 but the current progress is unknown due to the economic crisis and the ongoing changes in the educational system. The initial objectives of this initiative was to apply a Learning Management System with electronic content and communication abilities through the establishment of a LMS, training in use of the LMS, and by providing access to students/teachers/parents.

Conclusion

Today students often have full-time jobs and families to take care of and many are reluctant to participate if it means relinquishing high-quality family life and job achievements.

They need flexible education: education that allows them to combine job, family, and education in a manageable way.

Both studies show that online students have better average grades and a lower percentage of failing grades. This does not necessarily show that online courses were better than traditional part-time courses, but it shows that online learning seems to work very well for students who have chosen to study online.

Most educational institutes in Cyprus and abroad offer a kind of online learning. Is an investment that they should make and the benefits both tangible

and intangible are so many that definitely it worth the cost. Better reputation and better support for your students and lecturers, while decreasing your costs and attracting new students.

The cost for the implementation and open source LMS is expected to be more than 30,000 Euros since an initial investment has to be made in term of new hardware (servers, firewalls, routers, switches, etc), software licenses (Windows Server, exchange server, SQL server, Oracle server, LMS licenses if it is a non open source program, antivirus, etc), network upgrade and support fees to the company that undertake the duties of setting and supporting the system.

From the time that the Cyprus Ministry of Education has decided to invest on LMS and implement this technology at the schools, is obvious that the higher educational institutes will have to follow. Within the next 5 years this will be the reality.

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http://www.moec.gov.cy/ekpaideutiki_metarrythmisi/index.html
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- One laptop per child <http://laptop.org/en/vision/mission/index.shtml>

- Private Institutions of Tertiary Education Cyprus Ministry of education and culture
<http://www.highereducation.ac.cy/en/priv-alexander-college.html>
- http://www.highereducation.ac.cy/en/pdf/nomothesia_UNIFIED_LAW_1996_2004_ISTE_EN.pdf legislation <http://www.moec.gov.cy/nomos/diplomas.htm>
- http://www.astd.org/LC/2007/0707_karrer.htm Understanding E-Learning 2.0
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http://www.astd.org/NR/rdonlyres/12ECDB99-3B91-403E-9B15-7E597444645D/23395/LMS_fieldguide_20091.pdf
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