

**EUCLIMA: The personal micro-Clima concept, as environmental policy redefinition for modern cities: sensor interfacing, anti-pollution technology and economic development aspects.**

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*Abstract:* - We propose the term EUCLIMA to define all monitoring and antipollution facilities. Market deregulation is one of the principles on what we are building EU of the future. We propose special sensor contracting actions to facilitate the environment improvement and/through a series of future inventions like: Electricity auction home devices, environmental police informer, euclima restaurant and traffic acceleration.

*Key-Words:* - sensors, city pollution, contracting, economic Deregulation, defense, regional development, financial services

# 1 Economic development and City environment

## 1.1 Porter Hypothesis

The Porter hypothesis [1] challenged the 'conventional wisdom' of an inevitable trade-off between growth and the environment, arguing that 'the conflict between environmental protection and economic competitiveness is a false dichotomy'. Basic thesis is that regulation can stimulate innovation that reduces the costs of complying with it:

"properly designed environmental standards can trigger innovation that may partially or more than fully offset the costs of complying with them".

It is not immediately obvious why this somewhat innocuous claim should have generated so much attention, particularly as it is widely recognised in the field of industrial economics that there are a number of reasons why firms will not always maximise profits in practice. Other researchers established the "Porter Hypothesis" in a concrete economic base [2], [3], [4], [5], [6]. We

## 1.2 City environment market deregulation

Market deregulation is one of the principles on what we are building our real new European Union in 2012. It is the basic economic rule of competition that has to be applied to regulated by the dominating nations and politicians. Non engineer economists believe that central guided market is a communistic fossil but this is not true. The state iron hand to every tiny economic operation is equally adopted by all political parties from extreme right dictators to advanced heroic communists.

To facilitate this economic deregulation concept special technology could be used. I personally believe in the vital role, that they play future inventions., [7], [8], [11], [12], [13], [14], [17], [18], [19], [20].

We here today we try to define a multi concept for the relation of:

- City economic progression.
- Environmental protection and restoration.
- Inventions and patent implementation.

# 2 Personal microclima

## 2.1 Axiom 1: Anti pollution devices

Our evolvement to environmental protection started from a statistical research at Tech University of Kozani students under our guidance. They analyzed four factors:

- The number of research papers;

- The European union funding;
- The scientific or engineering nature of the above.
- The actual anti-pollution products in the consumer high end market.

They came at axiom number 1:

### Anti pollution devices is a necessity

That is we have to invest in inventing machines and devices to restore the polluted environment.

## 2.2 Axiom 2: 95% inside doors

Our students analysed the everyday life of the world inhabitants with the unique question of "indoor living". A person lives outdoor when he breaths in the open air, otherwise lives indoor in a variety of enclosures: house, vehicle, train, school, factory, office, shopping mall, city gym, bar-restaurant, cinema etc.

They investigated exactly 10,000 different persons from all five continents with the simple internet methodology of:

- Internet Relay Chats
- Internet Blogs

The methodology was rather simple. A simple question it is added to the everyday normal chating of our students:

"Describe your last 24 hours of your everyday life."

When the conversation comes to the conclusion, our student reported to URL a simple two digit number defining the hours stayed indoors; 23, 19, 24 etc.

Another approach was to extract results from TV soaps and news from satellite TV stations around the world. I rejected all the these sources, because my Media production experience indicated that TV producers prefer indoor shooting and ENG (Electronic News Gathering). Studio production cost is a small percentage fraction comparing with outdoor full scale production and TV is not reality by definition.

After the initial basic measurement phase we expanded the results to real people living real lifes, not internet maniacs sealed in-house attached to a keyboard. We added to the estimation special cases like adults, elders and people in poor health. The results was not astonished. We expect these from phenomena like:

- the increasing tourism industry,
- cocooning behaviour
- and psychiatric research:

After all the above we defined axiom two:

A person lives 95% of his life inside doors.

That is we have to invest and invent machines and devices to restore the in-house polluted environment.

### 2.3 EUCLIMA definition

According to the two above axioms indoors antipollution roadmap has a lot of different characteristics in economy, technology and politics. We propose the term EUCLIMA to define all monitoring and antipollution facilities. The prefix "EU" has nothing to do with European Union. It is the same euphemistic definition used to construct the name EU-ROPE in ancient Hellenic language. In English "Eu" is used frequently in composition, signifying well, good, advantageous; (the opposite of dys).

Therefore EUCLIMA standard must define at a technical and conceptual level all in-house full feature monitoring and antipollution requirements. [15]

## 3 Market de-fragmentation and explosion

A generation ago, once upon a time International Business Machines wanted to reduce the CPM Operating System from the newly established IBM PC. IBM picked up from the heap of nowhere MS-DOS from a young fellow, named Bill Gates. At that time Bill represented the revolution against IBM, exactly as today everybody we support the war against the instability, represented by Microsoft products.

This instability is not the worst Windows inability, there are a lot of others that disappoint both the user and the business community. We selected steadiness as the main feature of a real time operating system necessary for the environmental standard.

This environmental standard must:

- Be embedded in a real time operating System.
- Be carried out by handheld PC devices.
- Be open for future integrators.
- Has Consumer has human understandable standards and altogether
- Be transliterated in machine understandable XML type standard [15, 16].
- Be appeared in the market immediately.
- Incorporates all type of environmental data from air pollution and water purification to electromagnetic interference and symbol confusion.

- And finally incorporate features described in the rest of the document necessary for the antipollution market to grow.

### 3.1 Sensors

Various sensor and associate electronics are:

Acoustic	Biological	Biometric
Capacitive	Chemical	Electric
Flow	Force	Gas
Health	Inductive	Magnetic
Metal	Microelectromechanical	Motion
Detectors		
Nano	Optical	Piezoelectric
Pressure	Radar	Radiation
Sensor	Smart	Temperature
Networks		
Viscosity	Water Detector	

Every such a class pertains several actual devices varying in dimensions, accompanying electronics and price tag. These classes pertain the basic industry workforce but other classes has to be appeared in the market soon under our EUCLIMA prediction.

### 3.2 Future inventions

We selected from our future inventions concept in two different business options:

- Consumer devices, that a consumer could find in the free market.
- Integrated systems with increasing complexity, state support and business opportunity.

## 4 Future Consumers devices

A consumer device must meet certain criteria like:

- Design by marketing professional not isolated engineers.
  - adequate low price
  - durability for error and maintenance operation.
  - Simple functionality
  - Global wide target market.
- I selected to describe three indicative future invention consumer products:
- Electricity auction devices
  - Environmental police informer
  - Food & Drink industry tester

### 4.1 Electricity auction devices

Thermoelectric Power Plants have a serious drawback. They produce energy continuously without the possibility of reduction or shutting down. Every restart costs several hundreds thousands of Euros in maintenance and waste of fuels. On the other hand the only way to reduce

electricity instantly is to open the steam valves and leave the expensive steam to the atmosphere. Engineers tried a variety of solutions like electricity transfer around time zones, machinery modification and mathematical models of electricity consumption.

A more modern approach is the electricity auction on demand. The electric factory in the critical zero action moment faces two options:

- Open the steam escape valves, a very wasteful operation.
- Increase instantly the electricity consumption, a logistics impossible operation.

We propose a innovative logistics approach with the following steps:

- The factory releases every moment a time frame and the associated KWh price.
- The pair of time and price enters into an internet enabled electricity stock market.
- At the other side of electricity supply chain the home or industry consumer watch the prices and they decide to start or close the energy-hungry devices.
- This electricity auction could takes place automatically, in a similar manner with the computer based trade in modern stock exchange markets.

In order to be useful this mechanization has to be embedded into energy hungry machines, modern electric devices and appliances like washing machines, heaters and air conditioners with storage capabilities, pumps, vehicle batteries chargers, electricity storage devices etc. A complex device like a washing machine must have characteristics like:

- Independent web browser to extract time stamp and price.
- Keyboard or button where the user defines the desired minimum and maximum prices and other consumer annoying functions.
- Software that advices for the electricity auction faces.
- Electric relay box that controls the various washing faces.
- Display operation modes.

Such a machine could reduce electricity cost and derived CO<sub>2</sub> pollution. The same approach could be used in all energy hungry home and consumer machinery. Although European Union advices the use, this auction device did not appeared in the market yet. The only reason I can figure out is the state monopoly energy that strongly defends to any deregulation effort.

## 4.2 Environmental police informer

The idea of police informer varies around the world. In Sweden a citizen informs happily the police for every law violation while in certain places in Central Asia every outlaw quite easily finds a restful place to survive. The newly established Environmental police in international, national and city level needs new law enforcement ideas.

The digital proposal to our electronic world is a consumer device with the following functional specifications:

- Based on a handheld mobile PC or cell phone with additional utilities.
- Attached sensors and electronic to trigger the measurement procedure.
- Embedded firmware that proves time and space in front of any state and legal authority.
- Fingerprint or other biometric device to ensure the legal identity of the informer.
- Various model could have the capability to verify the existence of any pollutant from Carbon monoxide (CO) to radioactivity.
- Register and report generally non environmental violations like traffic violations, ethics crimes, noise.

The use for such a machine is very simple. The machine instantly or continuously monitors a class of environmental data. The owner reports to the police all data along with his personal testimony. Legal procurement follows against the guilty while the informer earns a percentage of the final fine.

New devices bring new business opportunities for the private sector only. Behind this device could be build a company with simple business steps:

- Investment in hand-held and central equipment
- Hires and trains the personnel,
- Collect violation data
- Forward to police authorities along with personal testimonies.
- Collects the fine.

## 4.3 Food & Drink industry testers

Let me now to recall in our memories ancient History and Cleopatra the famous beautiful Egyptian queen. She had a dedicated person to test every food and drink. In our days this dedication should be done by a variety of consumer devices like:

- Personal poisoning advisor.
- Air NH<sub>3</sub> de-synthesis tool.
- Allergy warning personal device.
- Personal waste basket analysis.

The concept exceeds environmental restoration but food and drink represent the vital human needs, they

are the life itself. Such a device could gain serious market attention if a standard is adopted shortly.

## 5 Future Business opportunities

To demonstrate the future invention theory in business I selected four large scale business applications:

- Luxury house monitoring & sanitation
- EUCLIMA Restaurant
- Cell telephony SIGINT
- Sensor based contracting technology for urban and house antipollution.

### 5.1 Luxury house monitoring & sanitation

A luxury apartment in the modern city has numerous facilities and appliances like electricity, internet, gas, water, fire alarm, burglar alarm, cable TV, HVAC and others. However all these are common to all people. A decade ago, when we designed along with Philips Netherlands and a cloth designer the house of the future [9], we found out that the very rich glamorous families were unable to build the house of their dreams. Such a house needs only one future: owners vanity with a very expensive possession. Two features compose this executive chosen few residence:

- The first step is full in-house monitoring.
- The final second step is restoration of the living space to a predefined standard close to Paradise.

In-house monitoring standard includes:

- Sensors to every room for each pollutant.
- Personal waste basket analysis.
- In and out water measurement.
- Food analysis.
- Illegal drugs and narcotics path trails.
- Chemicals sniffing for Ammonia, various monoxides,
- Tracing microelements of dangerous food in the store room and kitchens.
- Analyzing toilet plumbing and performing medical tests like narcotics and HIV.
- Presentation and emergency reporting.
- Measurement standards variation according to science progression.

Antipollution installation must to:

- Filter the air for all type of pollution from micro dust to bacteria using existing technologies or new inventions.
- Raise the house Oxygen up to a desired level.
- Take away dust and other dangerous materials possibly with micro-robotics.

- Filters the main water facility.
- Block out with a variety of methods any harmful electromagnetic waves, from illegal audio capture bursting devices to most dangerous explosives tele-commander. (usually celebrities have enemies)
- Trail and grab machinery checks every food ingredient and cooked meal and drink for nutrition and poisoning. (I cannot imagine how, a film maker could help us)
- Report all generated improvement actions.
- Alarm all crucial non corrected air, water, food, radiation, noise etc

Additional analogous non pre-designed benefits for such a house are:

- A fully monitoring lab easy could roll back to time and space and therefore it helps the medical treatment of disease incidents.
- Existing special systems that sniff explosives expiration date would help to avoid terrorist attacks.
- Similar compact system for vehicle pollution and restoration.

Of course such a house has severe complexity due to legal, technical, economic and ethics questioning. We are here to finance the answers.

### 5.2 EUCLIMA Restaurant

The same approach of inhouse monitoring could be adopted for public restaurants and bars. This time sanitation system does not cover the vanity needs of the owner but vital marketing and operational needs. European Union auditing has proven that more that an average of 15% food and leisure stores are not healthy. The kitchen is dirty, the hygiene is dangerous and the air in the main lobby has all kind of pollutants. The EUCLIMA standard incorporates technologies like:

- A tense building network of sensors.
- Sanitation and filtering for every room.
- Early warning for every tiny pollutant from traditional dioxides and Ammonia to Electromagnetic and symbol recognizer.

However a number of new systems is required due to the public nature of the invention. Such systems are:

- Secure continuums Internet reporting, to promote the shop perfection in relation with the competition.
- External auditing of the used standard and sensors calibration, in order to avoid fake or even generated results.
- Customer's awareness to understand and prefer the specific shop, cinema, etc

- Different EUCLIMA technology brands are possible and promoted in order to keep competition in high standards.

This business opportunity is not connected by any mean with the state.

Therefore very easily could be implemented without any type of public intervention.

### 5.3 Cell telephony SIGINT

From our previous work in Signal Intelligence [ 8 ] for the battle field, we inspired a people meter system. This is a simple RF passive direction finding system with main characteristics:

- Cell telephony operator independent.
- It finds the exact location of any person holding a cell phone in space and time.
- RF fingerprint technology for surveillance
- Combined with exact 3d city maps it could generate indoor city living cartography.

The system is designed for Urban planners to measure population but can be used in emergency management, traffic design and on line transportation bus and metro scheduling. Although this is not a core environmental device, but only a supporting system, it facilitates the overall anthropocentric nature of antipollution technologies.

### 5.4 Sensor based contracting technology for urban and house antipollution

City environmental contracting faces a number of irregularities, primarily because of the newborn nature of environmental protection, if we compare it with mankind history. We recently entered into sensor contracting international research [ 10 ]. This is a method to bring together the various phases of the antipollution policy. The general concept is to measure the results of antipollution with sensors and systems. All payments will be associated accordingly with these results. We demonstrate two examples of antipollution contracting payments:

- Traffic acceleration
- Air improvement and purification.

#### 5.4.1 Traffic acceleration

The traffic antipollution contract prefigures that, for every raise of 1 km per hour average city speed the service provider cashes 11 million Euros for every year. The payment takes place from a network of cheap traffic velocity sensors located in major metropolitan areas. They all calculate un-doubtfully the peak and average vehicle traffic jam. It is chosen to be a very simplified methodology for three reasons;

- to be understandable by the citizen;
- not to be bypassed by an average attorney;
- to promote long term investments.

After the contract sign, the company uses any known technology up to the limit of his capabilities to raise the metropolitan vehicle velocity. Technology and methodology list includes:

- parking management
- traffic light coordination
- hand held police informer, that described above,
- SIGINT surveillance to predict traffic flow.

#### 5.4.2 Air improvement and purification.

The air improvement antipollution contract simply defines an annual payment of 1 million Euros for every 0.1 per cent reduction in atmosphere carbon dioxide (and 2,000,000 € penalty for every 0.1 % increase). The measurement takes places in a secure, third party, contracting parties irrelevant, network of sensors.

Then the contractor is freely to perform any action to improve environment. Starting with the classic agricultural action: a lemon tree on every roof garden;

They can also finance a free handheld environmental police informers for every citizen. I imagine the Athens bunch of hooligans:

- running after polluting vehicles;
- sending the evidences to the Police and,
- later on, claiming their percentage of the punishment fine.

#### 5.4.3 Traditional and sensor contracting comparison

According to our sensor environmental contracting :

Instead of traditional	we propose
Purchasing materials - performing tasks	<i>Services and results</i>
performance bond on early delivery of antipollution facilities.	<i>performance bond for less Carbon monoxide in atmosphere.</i>
Government pays a widespread variety	<i>Government (always) pays more money but</i>

of consultants, companies, executives and corrupted public servants without real results.	<i>with certified, understandable, clear to the people antipollution result.</i>
<i>Contracting is a law and engineering science very complicated and expensive.</i>	<i>Non confused contracting is needed, a simple agreement is enough.</i>

Sensor contracting assist:

- Defragmentate the antipollution market with the introduction of new patents.
- Pollution improvement.
- Public opinion measurement
- Pre-contracting statistical and budget efficiency data

## 6 Conclusion

The future invention list has a unique scope to persuade International Banking Monopoly to invest in antipollution generally. We have to face the challenge and form the necessary tools and funds in order to reverse the world history. I personally have to fight for antipollution to martyr along with various Orthodox martyrs. Evangelist John wrote Apocalypse in Patmos Greece 2000 years ago [ 21 ]. Revelation clearly identifies World pollution tragedy as the fifth trumpet, just two before the final judgment.

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