

Not Serious About Energy Independence

WASHINGTON – “The Stone Age did not end for lack of stone, and the Oil Age will end long before the world runs out of oil”. Thus The Economist (“The End of the Oil Age”, October 23, 2003) quoted Sheikh Zaki Yamani, the Saudi Arabian who served as his country’s oil minister three decades ago. The idea was that new cost effective forms of energy would come about sooner rather than later that would make oil obsolete. Indeed. And he said this in 2003, that is well before the staggering ascent of the price of crude.

While valid in principle, this consideration/forecast about the phasing out of oil due to probable technological innovation is still a distant dream. Notwithstanding the immense added economic burden for all consumers due to the fantastic price increases of the last few years, and notwithstanding the new political uncertainties and increased risks in a new era characterized by increased demand not met by new supply, we (America and the West) have yet to show seriousness about rendering oil obsolete.

We do reasonably well with clever propaganda. BP, British Petroleum, in the last few years tried to become a hip brand with the catchy “Beyond Petroleum” advertising campaign, and its new, decidedly green, logo (a mixture of a flower and a sun); trying to give the impression that an oil multinational is in fact deeply involved in getting us as reasonably fast as possible (“It’s a start”) to a new, sustainable, environmentally conscious era of renewable sources of energy that will indeed take us all “beyond petroleum”.

Well, as we know, “Beyond Petroleum” slogans and clever ads (“What is your carbon footprint”?) notwithstanding, BP got enmeshed in run of the mill, old fashioned oil company

problems, from fires in refineries in Texas to pipeline corrosion issues in Alaska that raised doubts about supervision, competence and questionable cost cutting practices. Nothing hip nor particularly green about any of this.

While there may very well be a genuine desire (that is, beyond cheap public relations) to get to another, non carbon based future, the reality is that BP is still fundamentally an oil and gas company –just like Shell, Eni, Chevron, Total, Repsol, Exxon and all the others. The reality is that oil, gas (and coal for power generation), for the time being, are the primary sources of energy.

It will require an enormous effort –of which we have no sign, as yet– to go “beyond petroleum” and it will be much harder to get there without a determined, serious and sustained public policy framework –the USA clearly in the lead– that will provide the necessary guidance to all market players that the time has indeed come to unleash a new “post petroleum” era, a strategic shift that goes way beyond BP’s slogan. Time is not on our side. Incremental progress, even if genuine and sustained, is just not enough, as it will require too much time.

Of course, right now the principal argument for change in energy policies is global warming with all the well publicized attendant disaster scenarios. But despite the solemn declarations, truly decisive action, even on the part of the climate change converts, is not apparent.

Be that as it may, even absent any environmental doom about which the US as a society is less convinced than others, America should drastically change course, because reliance on an ever more expensive, –and ever more scarce– resource for which there is increasing international competition creates strategic vulnerabilities and opportunities for conflict that are simply too great to be wished away, hoping that nothing

will happen.

As far as the United States are concerned, the largest economy and the most important military power has to regain the autonomy and flexibility that energy self-reliance can provide. (Of course, what is true for the US is also true, in varying degrees, for the rest of the western world).

But, whatever the others may be doing, it is imperative for the United States to declare and seriously embrace *—now—* a post petroleum strategy that will make oil as unimportant as the stones left behind at the end of the stone age. Needless to say, should this really happen, the realization that America *—the recognized innovation leader and at the same time the largest consumer of hydrocarbon products—* has turned a page on energy would send a signal to the rest of the world.

Hints that the signal was coming came via the “America addicted to oil” segment within the January 31, 2006 State of the Union speech to Congress by President George Bush. But the “Advanced Energy Initiative” announced with gravitas by the President in that occasion turned out to be a rather modest increase in federal money for energy research. Hardly revolutionary, and hardly the policy shift that would signal to the country that a momentous strategic transformation is about to take place. Basically, this was business as usual *—with a small twist.*

Much more recently, another opportunity came and went with the Energy Bill that the Congress (after laborious gestation) just passed and the president signed into law on December 19, 2007. Sure, there is something there: a kick to the auto industry so that it will improve the fuel efficiency of the cars that it makes. And then mandates that will require an increase of renewable fuels for transportation and power generation.

But, while significant, these new policy directives do not signal the unmistakable determination to radically transform

the energy equation in the shortest possible time. We can comment piously that “a step in the right direction” has been taken. Yet this is not what it takes to achieve the objectives included in the bombastic title –“Energy Independence and Security Act”– of this new legislation. Given the predicament we are in, this is little; so little to be insufficient.

Indirectly, this bill reflects a basic political fear: who dares telling the public that we really are in a dangerous and unsustainable situation which exposes the country to a fantastic strategic vulnerability, as we import more than 65 per cent of what we consume, while the cost of importing this energy (309 billion in 2006) represents an ever growing, huge item in our trade deficit?

The protectionist populists tell us every day that the deficit with China (232 Billion in 2006) is at the root of our horrific trade imbalances and is to be viewed as a strategic threat. Yet, strangely enough, the huge and growing cost of importing most of the energy we use –arguably a much more significant strategic threat– is almost never mentioned.

Sure, everybody knows (and complains about) the price of gas at the pump. But few understand that the money they pay does not end up in the pockets of Exxon and the other greedy multinational oil companies. It goes mostly overseas, to the producing countries which own the oil fields. And this financial hemorrhaging is not going to recede, given the steady price increases.

If we were serious about calculating the aggregate cost of oil imports, we would add the indirect cost to our economy of this substantial capital outflow. This is money that could otherwise be invested in productive, employment creating activities. (Sure, some of this oil money is ploughed back into the US via purchases of US products and services by the oil producing countries. But this is only a percentage of the total. Hardly an even trade). Thus, even on purely economic

terms, there should be a solid argument for an aggressive pursuit of alternatives to oil.

But, beyond the economic cost, we have a huge strategic vulnerability. Simply stated: we have no way to make up for loss of supplies, should they be interrupted or significantly curtailed for more than just a few months (this is the extent of our strategic petroleum reserve) due to political upheavals beyond our control.

It is high time to end the dissonance between often proclaimed fantastic objectives of "energy independence" and very little by way of new resources and new policies aimed at getting us there. If we indeed agree that it is imperative to usher America into a post petroleum era, (otherwise what is the meaning of "Energy Independence" stated as a goal in the new law?), then we need to act convincingly. Of course, this is a gigantic undertaking that would require immense investments over a long period of time and the retooling and reengineering of vast portions of our economy.

If energy were just another economic sector, then it would be wise to let the market devise new cost effective solutions. But energy, unfortunately, due to well known geopolitical factors, is in a category of its own. Waiting for market solutions (even with the added prodding of recent legislation) entails exposure to immense risks for decades to come.

But these risks, while generically acknowledged, are never discussed in detail. It is high time for the political leadership of the United States and for all aspiring presidents in this unfolding campaign for the White House to level with the public and tell America that we should aim at eliminating our strategic vulnerability as soon as possible, being fully prepared to bear the cost and inconvenience that getting from here to there will entail.

But unfortunately it seems that the political leaders' courage

is confined to defining lofty objectives in the headings of legislation (“Energy Independence and Security Act”). It does not extend to the deeds necessary to secure them.

The Accumulation of Human Capital Is An Art – It Requires Special Care In Nurturing Talent – The Importance Of Innovation Friendly Eco-Systems

By Paolo von Schirach

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WASHINGTON – “A free market in brainpower”. This is what Fortune magazine advocated in an important article on high value human capital. Brainpower encompasses the valuable (but, apparently not universally valued) educated people who, often congregating in clusters of researchers, innovators and entrepreneurs, constitute the strongest asset that an advanced knowledge economy can have. And this precious brainpower is, of course, at the foundation of the ability to discover and invent; and, in so doing, open new horizons, create new value and, ultimately, more shared prosperity.

Human capital is key

Highly developed human capital is absolutely crucial to success and to retain success. Many students of the

phenomenon, such as Richard Florida, have noted that, assuming unimpeded freedom of movement, the innovators tend to move where there is a receptive environment whose main pillars are quality research universities that truly encourage and sustain new thinking and cross pollination with new enterprises. Overall, in these clusters there is an open, tolerant space where dialogue and exchange is not only possible, but really interesting and vibrant, so that it will act as a magnet for fresh talent to pour in. Professor Florida and others have described how cities like Austin or Seattle or Vancouver have become such magnets. And all this is good.

Free flow of talent

The problem is in the fact that we do not have a system that guarantees the absolute free flow of talent so that it will congregate in suitable cities. At least the flow is not as free or as sustained as it could be in optimal conditions. For instance, in the US case we have a major “upstream” problem constituted by a mediocre to bad secondary education system that is simply incapable of producing the numbers of new quality students who will go and repopulate the universities and graduate schools in the magnet centers, or elsewhere for that matter; thereafter becoming the innovative entrepreneurs. We have many such centers, of course; but not enough. Bill Gates of Microsoft appeared in front of the Senate Labor Committee pleading for radical reform of the entire US high school system, bluntly indicating that the likes of Microsoft cannot employ the products of this outmoded, under performing education system.

Of course, lacking domestically grown brains in sufficient quantity, we could import them, as we have done in the past. Indeed. And here it is important to notice, as Richard Florida pointed out, that, on average, if we lump together all the immigrants coming to America, we discover that they are more educated than the native population. While we tend to think of immigrants as mostly low cost manual laborers, “11 percent of

foreign born adults in the United States –states Florida–have a graduate or professional degree, compared to only 9 per cent of natives “.

Quality immigration

It would appear that this quality immigration has made a real difference in the past, giving a significant edge to America on an intellectual, research, innovation and ultimately economic level. Today, any casual observer cannot fail to notice the significant percentage of Indian, Chinese and other immigrants at the top of high tech and other firms in the United States. These highly skilled individuals add value and help America retain the edge that the native population alone could not secure by itself.

Too many talented immigrants?

But these facts notwithstanding, amazingly today the debate is not on how to create a system that will help us secure this advantage brought about by high quality immigrants by encouraging more of them to come here. In fact, just the opposite. The debate is on how to prevent educated would be immigrants from “stealing” American jobs from Americans. The main argument for protectionism in intellectual and academic jobs is now exactly the same as the one regarding opposition to openings to low skilled laborers. Opponents maintain that, by flooding the market with foreigners, employers inflate the labor supply; thus they can keep wages or salaries artificially low for all. While there may be some truth in this, it would be very simple to establish and police a level playing field, whereby all people would compete on skills only, and not by willing to accept below market compensation.

The inability to attract fresh talent is a very serious issue. Of course, after 9/11, we had a truly anomalous situation in which security overwhelmed any other concern as to the desirability of feeding the old pipeline that led foreign

highly educated people to the US. While things have changed a bit, the damage has been enormous. While the US pipeline was reduced to a trickle because of new security obstacles, (and also by the perception that talent from many countries was not wanted, due to political reasons), other pipelines have been fed, primarily leading to other Anglo-Saxon countries, but not exclusively.

All this notwithstanding, to date, the US still retains an enormous built in advantage in the many centers of excellence already established that can keep attracting talent, assuming no artificial impediments to this flow. Thus the, relaxation of the post 9/11 restrictions, combined with more aggressive recruiting should see the increase in the flow of foreign talent.

Cluster formula can be replicated

Of course, the US formula is not unique. With many variations, it can be replicated. Given the right mix of ingredients, vibrant research and innovation communities can be established, and have been established elsewhere. Just to name one of the most obvious examples, Nokia did not come about in Finland accidentally. It could get established and thrive because it benefited from a vast connective tissue that starts with excellent secondary education and continues with world class academic centers such as the Helsinki University of Technology, located in Otaniemi, along with research facilities in Oulu, in the north of the country. Add to this mix a fairly cosmopolitan English speaking population and a public sector willing to invest heavily in the future, through pro-innovation agencies such as Tekes, and one can see why Finland has many first rate innovations centers that make it one of the most competitive economies in the world.

Immigration not benefiting Europe

Having said that, Continental Europe overall is in worse shape

than the US. Many new immigrants are settling in Europe. However, the vast majority of the newcomers flowing into Europe are under educated, compared to the averages of the native population. Unless current demographic trends that point to a rapid shrinking of the native Europeans are reversed, Europe in the future will rely proportionally more on the value of the contribution of under educated immigrants. Given significant cultural and religious obstacles to full integration for many of the new arrivals, many of them will live at the margin of society. They will be incapable of making significant contributions to cultural and entrepreneurial advancements in their adopted countries; at least not comparable to the contributions made to the US economy and society by many of the "high value" immigrants to the US.

While the US and Europe do seem hesitant about launching bold policies aimed at attracting more international talent, others try; but success is by no means guaranteed.

China lacks the eco-system

China, the world's workshop, thinking about its future competitiveness, may certainly want to transform its enviable edge in low cost manufacturing into high margins derived from innovation and original entrepreneurship. But, for the moment at least, China still lacks the open, tolerant environments necessary to nurture innovative minds. Its universities are still largely hierarchical, bureaucratically organized structures; a far cry from the nimble, decentralized model prevalent in the most innovative western counterparts. Given time, of course, all this will probably change and the Chinese innovators may very well find optimal homes to test their ideas in their own country.

In India, a far more open, liberal country, at least compared to China, this is already happening, to some degree. Many expatriate Indians, seeing the emergence of islands of

excellence in their native country, now see the value of going back to their roots and contributing to their growth. This amounts to both a net drain from the places in which these expatriates had previously established themselves, as well as a cut in the future flow of talented people who now are finding adequate outlets for their creativity in centers of excellence closer to home.

Can we buy our way into innovation?

Elsewhere, we observe the desire to leapfrog decades, perhaps centuries of backwardness through bold moves. Understanding that the future will belong to those who innovate, Saudi Arabia is now deploying a sizable chunk of its oil wealth in a bet aimed at creating a brand new center of excellence in science and technology, that hopefully will open new vistas for the country in future times when the oil rent will have been depleted.

The King Abdullah University of Science and Technology, or KAUST, opened for business in 2009. It is willed and funded directly by the sovereign who has devoted to this effort 10 billion dollars; thereby, in one day, reaching the endowment level that took MIT 142 years to create. For the time being, the effort is shepherded by Saudi Aramco, the national oil company, arguably the most modern, technologically savvy Saudi corporation.

This higher education enterprise, along with the parallel venture of Alfaisal University, due to open in September 2008, represents a very concrete attempt aimed at transforming a culturally backward country into a nimble, innovative society. The intentions are serious and sincere. The open question is whether, vast amounts of money notwithstanding, Saudi Arabia and similar places can create that unquantifiable atmosphere, well described by Richard Florida and others, that makes places productive because they are attractive and vibrant. As Mr. Al-Kattan, Dean of the soon to be opened medical College

within Alfaisal University put it, referring to life in Saudi Arabia for the mostly expatriate faculty that will be necessary at least at the beginning to get things started: "This environment will not suit everybody".

Indeed. Let us say that, unless life in the kingdom changes dramatically, it will suit mostly those expatriates who are willing to make sacrifices for the sake of attractive compensation packages. While these individuals will provide a starting point for what should be high quality education, it does not follow that these richly endowed universities will be able to create an environment that will make them true centers of excellence. There is a correlation between a cosmopolitan, open culture and innovation. Saudi Arabia may need more than gigantic infusions of money in order to catch up with other advanced societies.

Human capital needs care

Given the formidable obstacles on the way to bridge the gap in the formation and nurturing of human capital, it is astonishing that the West, the US in particular, which spent decades and decades to build it, is not sufficiently concerned about its preservation and upkeep. At this stage, waiting for a renewed pipeline of scarce domestic talent, (whose flow will depend on drastic public education reforms), one way of guaranteeing the future viability of centers of excellence is in welcoming those who would like to come but who are prevented by current cumbersome security screenings (they are necessary; but there must be ways to expedite them) or by measures aimed at protecting the home grown human talent.

Human talent, as anything else, should thrive from being tested against worthy competitors. As long as we can ensure a level playing field for all, Americans should not fear the newcomers. But if the real reason for restricting this competition is that we want to ensure that the home grown talent will be guaranteed the best slots, we may do some

people a favor; but a great disservice to a society that will not be truly aware of what others can contribute. In the long run, protectionism, pursued for its own sake, in whatever area, is a defensive measure, a rear guard battle that is always lost.