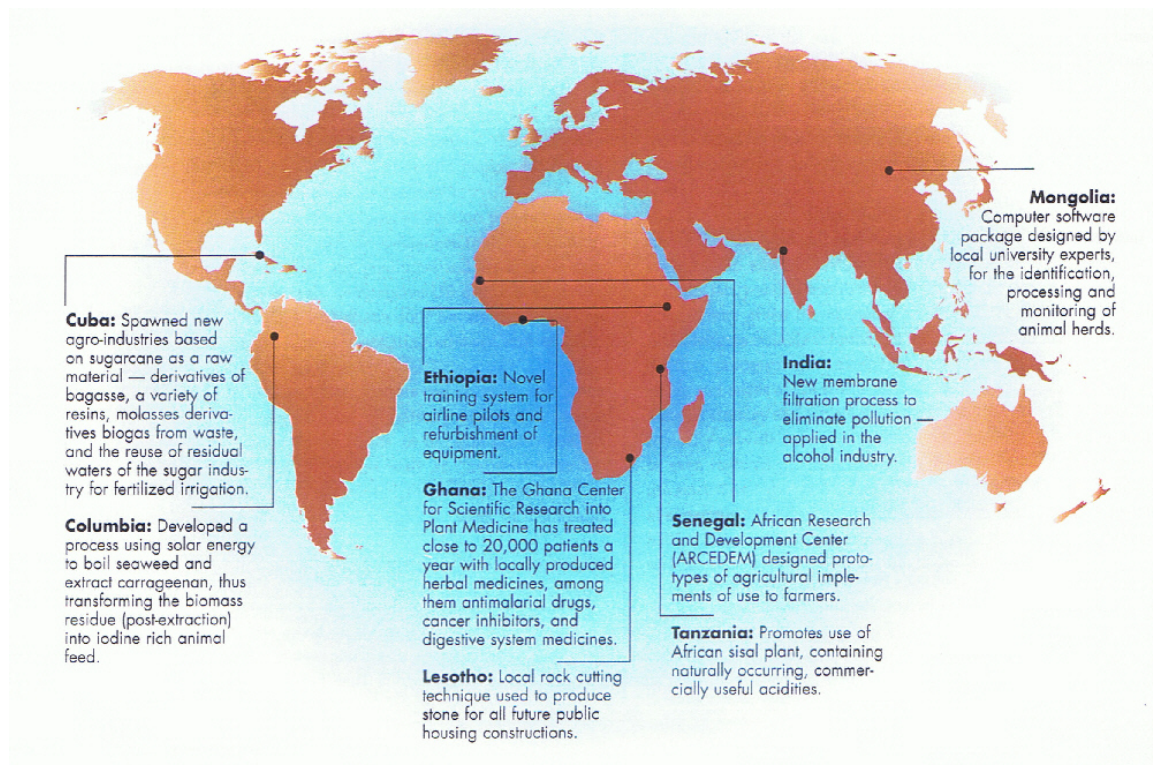


A Catalytic Approach to Unique Product Development in the South

by

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A Catalytic Approach to Unique Product Development in the South

The creation of new products and new markets, both domestic and international, is a constant topic of discussion in many development circles.

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One school of thought on how countries in the South should increase their productive capacity places emphasis on developing export crops. The subject has generated a great deal of discussion about the productive capacities and supply response of Latin America and the Caribbean and about how to satisfy the year-round demands of northern consumers for fruits, vegetables and flowers. As investments in non-traditional export crops have grown, their advance has introduced a host of new economic and social problems.

The emerging consensus is that the most important consideration in development is the total value generated by all the activities within a country and that an emphasis on export crops may not actually produce sustained benefits.

The present article advances an approach in which the South would develop its own answers to the productive capacity/supply response dilemma, first by developing "unique products", and second, by promoting the "catalytic approach" to developing these products. This article briefly outlines the nature and scope of unique products followed by a discussion of the principal tenets of the catalytic model. It also highlights how unique product development is best performed by catalytic agents acting with normative motivations.

Unique Products

The extensive interest in the countries of the North for new types of organic nutrition and health foods heralds a demand for new types of ethnic and bio-diverse products. Diversified sources of supplemental foods and primary nutritive elements which could be harvested and cultivated, lie particularly in the flora and fauna of countries in the South. The typical unique product in this case is exemplified by a naturally-processed food, cultivated normally in very few (ideally, only one) places and which would draw on vast sources of indigenous knowledge – most of it not documented elsewhere but passed on from generation to generation through oral transmission.

This situation is common not only to food and nutritional products, but also to a multitude of other categories of "unique products" – natural geological and biological resources, local skills, traditional handicrafts and so forth.

The four general elements of a unique product system, are the following:

- Local-sourcing, from flora, fauna, native materials, skills and designs – anything that is available in abundance and can be processed by local men and women.
- An existing heritage-based experience among the local population to process the raw materials and obtain a relatively sophisticated product. Alternatively, at the very least, they possess the capacity to absorb new technologies to train for necessary specialization in succeeding generations, define new products and develop the productive capacity to bring to domestic and international markets.
- The capacity to develop the product in sufficiently large quantities and of sufficiently high quality so that the economies of scale and ability to supply world markets exist.
- A reliable base for forecasting the product's future or evolving market niches and comparative advantages so that these are performed prior to harvest in unique products. This first requires a careful and complete mapping of the local environmental conditions and rival producers in order to effectively decide on the most lucrative unique products.

Typically, categories of unique products are the following:

- Upgrades of an already existing agricultural product which, with the addition of some technological inputs, can vastly increase its value" for example, organic and gourmet coffees, new types of mustard combined with local herbs, exports of indigenous foods such as quinoa, pejibaye and araza. The process would involve taking the agricultural products and often, but not always, subjecting them to further processing and packaging, so that new and more sophisticated markets can be reached for more products.

Unique products from local research and development typically in the agro-based and mining industries. It is important that the advances in aquaculture, botany, earth sciences and biotechnology be fruitfully applied to countries of the South in order to translate their unique source/process concepts into product development for the marketplace.

The borrowing or extrapolations of products from elsewhere and the linking of them to the local ecology and production environment to obtain a superior product (Dutch flowers grown in Colombia), the search for native “functional equivalents” of global products, can by itself help identify new types of unique products.

The appropriation of special skills especially in product design or packaging, in combination with locally-produced materials, and designs that exist in the tradition of the art heritage of that country. Examples include: modern custom-made furniture that is manufactured with locally-available wood and carved with designs from Indonesia, Papua New Guinea, the Central African Republic, Palestine and Mexico.

The rapid development of products which tie in with rapidly developing needs for services. For example, entrepreneurs in the Republic of Korea effectively tied in the “close looping” practice of manufacturing drycleaning machines with the drycleaning business interest and aptitude of the many Korea immigrants in the United States. Thus, the growth of specialty drycleaning services and machinery shaped a rapid and natural “response system” to the demands of the market and evolution of new technologies.

Unique products are often developed by local entrepreneurs who see unusual and exciting market opportunities where external entrepreneurs cannot. An interesting example is the cultivation of a common zahtar plant (satureja) that grows almost exclusively in the Levant, but only recently was transformed into a flavorful spice by local entrepreneurs and marketed to the Arab world as a traditional regional spice.

Some unique products can be derived from re-reading “secret” old prescriptions kept within guilds or their equivalent manufacturing associations of centuries ago and subjecting them to an imaginative reincarnation. This old technology however, may be relevant for new products because of new market tastes and environmental realities. For example, the Czechs were able to rejuvenate a Bohemian trade secret in the field of sintered glass, which allowed them to make thin ceramic wafers used in buildings and paneling that possessed special insulation qualities and gave buildings an attractive glow.

The most promising unique product potential, especially in poverty-stricken areas of the world is the re-examination of the traditional use of materials that are plentiful, cheap and easy to obtain from nearby locations. Very often, in least developed

countries, assumptions of what is productive and what is not date back to colonial times. The new breed of native scholars who can take more modern and impartial views of the term “potential” and who have access to data banks on the country’s resources can fruitfully reassess the old assumptions made. Geological research in the Gobi Desert in the past has neglected to look at non-metallic resources and until recently had not identified the geological and technological options in such minerals as feldspar, quartz, bentonite and magnetite. In 1944, 20 products with medicinal value from animal sources were identified in the desert. Other examples include drinks made of Caribbean sorrel berries which contain exceptionally high-potency natural minerals and vitamins. The anti-cholesterol, lower blood pressure characteristics possessed by variety of cactus

products is another case in point. Fascinatingly, traditional food preparation of cactus products shows an appreciation of the distinct nutritional characteristics which can now be differentiated into unique products.

Some of the most pristine ecological conditions for unique product resources have been found in Africa, South America, the Caribbean, and in countries ranging from Mongolia and China, the Islamic countries, Russia, the former republics of the Soviet Union and Australasia, rather than in Europe and North America. The logic of South-South cooperation is, therefore, more relevant to copying success stories from the South than looking for major success stories from the North.

The notion of unique products is very closely tied to positive catalysis. Providing the right incentives and signals to local and external entrepreneurs more often than not appears to be the key to harnessing local capacities – both human and environmental – to the marketplace.

In 1994, French coffee experts studying the coffee-growing regions of Cameroon discovered the richness of the “green bean” and its tremendous potential, with some additional processing, to be turned into a fine gourmet coffee and marketed in Europe, North and South America. The local coffee growers quickly formed a harvesting cooperative and began to process green beans with the addition of imported technology which includes an information system to gather data on world prices and markets.

The essence of an effective relationship between entrepreneurs to develop unique products will be in a South-South relationship in which some input from the North can be brought to bear fruit. The provision of short-term consultants or single or periodic joint

The logic of South-South cooperation is much more relevant to copying success stories from the South than looking for major success stories from the North

ventures are often not sufficient to launch such sustainable enterprises. The ideal positive catalysis should be experimental, with mixed South-North groups that are intent on collective action and growth, leading (perhaps) to joint ownership with full mutual participation that is fundamentally based on realistic learning curves in local and foreign industrial environments.

The catalytic model of product development

Positive catalysis can be defined as a cooperative arrangement between individual entrepreneurs or social groups pursuing a common economic activity, with or without a group of specifically targeted “catalytic agents.” The entrepreneurs can both be located in the South, or partly coming in from the North, and the catalysts can include a local agent/agency and their foreign counterparts. In traditional market analysis, the first two parties would be the transactors engaged in an economic activity, and no third party would be part of the transaction. The catalytic model presented here is a viable alternative to the failure of traditional markets in situations where: one of the transactors is a monopoly; the article being traded is a public good; the transaction is fraught with risk and uncertainty; either or both parties have limited access to adequate reliable information to make efficient decision. The catalytic model is particularly useful in any economic activity that involves uneven distribution of technology, skills and physical resources between countries engaged in that activity. When it involves transferring technologies, or marketing and selling products that do not have established proven markets, positive catalysis must successfully recognize the importance of involving disadvantaged or non-traditional business partners, such as entrepreneurial expatriates, women entrepreneurs in the South or civilian-conscious military groups.

A catalyst can be a person or agency that makes the transaction work more efficiently – in terms of speed, in terms of providing complete information and most importantly, in terms of guaranteeing the equitable distribution of gains to both South and North. The introduction of a catalyst creates a win-win situation for all three groups leaving virtually no element of exploitation in the relationship. In this sense, the catalyst is the human factor that replaces the contracts and governance clauses of the institutional approach. The catalyst is the person whose function is, and who gains from, the smoothing out of inequity and inefficiency created by technology transfer, and who builds business alliances and friendships between new business partners and creates a sustainable egalitarian base for future transactions. If there is a catalyst the transactors interact only in balanced mutually-

beneficial transactions, the local community in the South can build a sustainable market for unique products in the North or in other Southern countries. UNDP/UNDDSMS Empretec export promotion programmes in Latin America, for example, provide specialized training and information support to local small and medium-sized exporters to gain a foothold in the aggressively competitive US markets. Exporters interact closely with United Nations staff on site for “tips” on attractive packaging and price negotiating strategy, and to build alliances with American importers.

The best way to explore what catalysts can do in general terms is to examine the specific case of military conversion in the economies of the former Soviet States, or in other post-command economies. The military plants, as well as “national priority” research foundations, were structured to produce and “sell” to other military-related industries along the lines of command economies.

At the end of the cold war and after the fall of communism, these military establishments were driven to the market by governments that understood less of the functioning of the markets than the leaders of the factories. The plants faced a market for military and civilian products in which every element was the obverse of the command-driven structures. Their attempts to develop market demand to drive new products with the assumed procedures and motivation of the past did not, and does not in the case of continuing conversion efforts, yield productive results. Many of the military conversion plants are failures whether they work within the unaided market economy or adopt contracting processes, patenting systems and other governance structures prevalent in the North.

A post mortem on the military conversion case (see Table 1) shows that the local entrepreneurs had knowledge of the local market situation and understood the motivations of their traditional vendors fairly well. Despite, this, they could not respond to calls for productivity given the changing conditions. The critical element was adequate reliable information and the ability to tune their production processes and marketing machinery to the fluctuating needs and tastes of the world markets. Without a personalized production strategy and a marketing road map that the catalyst would typically provide, attempts to succeed in the volatile international or even regional marketplaces were, in most cases, doomed from the start. Similar situations arise in a surprisingly diverse number of economic activities, notably in areas of communal knowledge of native herbs and medicines, and in highly nationalized markets serving demands of traditional single product consumers.

Table 1 – Market Failures in Military Enterprise

Management Style	Symptoms	Resulting Defects
1. Top priority on technology	1. Design with disregard to cost	1. High cost (lack of competitiveness and poor profitability)
2. Ignorance of marketing	2. Ignorance of consumer needs	2. Products have a low reputation on the market and do not sell well
3. Poor material purchasing ability (no recognition of the fact that profit lies at the source)	3. No effort and ability to lower material costs	3. Poor selling capability
4. No sales experience, high-handed attitude towards customers	4. Low capacity for creating or acquiring a sales network	4. Low productivity and poor product quality
5. Priority to the design department	5. Poor feedback capability for market information in the company as a whole	5. Manufacturing technology at a standstill
6. Lack of responsibility awareness (tendency to rely on and blame others)	6. The production department has little voice in the company and produces as it is told	6. Lack of drive toward investment activities
CATALYSTS MUST BE DIFFERENT IN ITEMS 2, 3, 4, 5 TO COUNTER THESE SYMPTOMS	THERE MUST BE SUFFICIENT CAPACITY AMONG CATALYSTS	CATALYSTS MUST BE STRUCTURED TO SET RIGHT ANY OF THESE DEFAULTS

In Ghana or Indonesia, for instance, the communities that have carefully nurtured and built up knowledge based on the healing powers of native flowers and herbs are increasingly turning to local patent lawyers and businessmen to guide them in deciding the terms under which that knowledge will be brought into the public domain through joint ventures with North country multinationals.

Table 2 lists the ideal attributes of each of the decision-makers in the context of their motivation, time orientation, mode of operation, etc. The entrepreneurs are the traditional transactors in a South-South economic activity, and the catalyst, as has been defined before, is the critical addition to the transaction; the one who motivates and steers the optimal outcome. In the best of all worlds, the

entrepreneur and the catalyst may be one and the same.

The definition of a catalyst has so far been a wide and all-encompassing set of attributes and activities that essentially present an attractive alternative to market and institutional systems. However, the catalytic function is best performed by a specialized team of individuals or agencies, each contributing their relative strengths in skills, resources and networks to the partnership. Various types of catalysts are distinguished by their geographic location, their nationality vis-à-vis the nationality of the entrepreneurs involved, their business interests, background and experience, their creativity, and global thinking and strategic strengths.

Table 2 – Enlightened Entrepreneurs and Catalysts: Identity and Challenge

Item	Enlightened Entrepreneur	Special Problems in LDCs: Solutions Expected from Catalytic Impact
Primary Motives	Freedom, access to corporate resources self-motivated but respectful of corporate rewards.	Any innovation in reward system may face negative societal sanctions; Catalyst continues in the ethnic, symbolic or traditional system.
Time Orientation	Goals between 3 – 15 years.	Catalyst explains the logic of urgency but orients the entrepreneur to middle and long range goals.
Modus Operandi	Gets hands dirty. May delegate but often does what is required by employees.	The catalyst delegates only to the culturally correct level. When gets hands dirty, makes sure that learning and comprehension ensues among participants.
Attention	Primarily on technology but also on legitimizing effort within the organization.	Committed to the propagation of the enterprise and its appreciation in elite and political circles. Fine tunes the image to new economic priorities and market realities.
Risk	Moderate risk-taker. Invests heavily but also wishes to succeed. Would consider personal risks including risk of being fired or being "out on a limb".	Catalyst must extend risks to the largest group of participants and institutions in order to minimize personal risk. Minimizes risk by actually consulting and consolidating with other catalysts.
Status	Considers traditional status symbols a joke – treasures symbols of freedom.	Capable of dual perspective of respect and behaves accordingly. Develops own status symbols and gradually applies them to participants.
Decisions	Adept at getting officers to agree to private vision. Patient and willing to compromise, but still a doer.	Catalyst exercises decision making power in a daring but timely fashion.
Failures and Mistakes	Aware of importance of appearing organized and orderly within the organization. Attempts to hide risky projects so can learn from mistakes without political fallout.	Less intent of learning quickly and fully from mistakes. Usually relegated to areas that could provoke a negative public response.

Who are the ideal catalysts?

It is essential to identify local catalysts in a South-South partnership because not all local business developers in the traditional managerial pools appears to be promising entrepreneurs.

Although many government officials or local elites can become a de facto catalytic team, there are others who may have better motivation and the education to adopt the learning-by-doing approach. They are:

- Military officers, particularly those with the aptitude to maintain, repair, improvise and search for improved military technology.

In the past two decades, the military in countries such as Nigeria, Thailand and Ghana have acquired a business orientation even with military roles. They have partnered with non-governmental organizations and the multilateral development agencies to put their military personnel and manufacturing capacity in a position to carry out SHD projects, especially in the area of environmental protection.

- Enlightened political leaders especially those previously engaged in business operations and now aware of the indigenous capacities their country offers. This particularly holds true for leaders on the peripheries of the country who, working with local groups, can embody the role

of the catalyst more effectively than political leaders in the country's capital.

- Women business aspirants and those who have already entered commerce, trade and cottage industries, using fledgling forms of three-way catalysis. Women are particularly adept in developing informal networks involving both information and assistance which can be very helpful for intra-regional and rural industrial coordination.
- Organized youth movements – High unemployment levels among youth is a problem plaguing many developing countries. It is important to tap into organized youth groups in order to emphasize a unique product strategy through training and workshops, taking advantage of that age group's enthusiasm and relative commitment to innovation.
- Teachers and trainers – Since this group has a natural ability to mobilize and motivate people, it is most appropriate to involve such groups in positive catalysis. Teachers and trainers thrive on organization and on the process of human potential channeled into action. They also undergo a continuous learning process and thus acquire skills relatively quickly.
- Business persons – It is obvious that nay business experience, particularly that of coping with the business environment in developing countries, has added value to the shaping of catalysis.
- Expatriates – Many expatriates have a tendency to take up roles as foreign catalysts as a result of their experience at the local and international levels. Such experience often create commercial opportunities through international trade. Many of these expatriates are socially marginal in their new countries and thus look for some form of business linkage with their country of origin as a means of financial stability.

It is important to focus on what all partners of South and North ought to have for an efficient catalytic role.

- A searching approach to business and tolerance for uncertainty.
- An organic and authentic feeling about working in a developing country.
- Quick to combine and respond to opportunity.
- Being prepared for trial and error.
- Awareness of all catalytic functions in the articulation of new partnerships.
- Perseverance and commitment to keep trying against all odds.

Developing unique products through business catalysis

What are the areas in which the catalytic approach is best suited to developing unique products in South-South cooperation?

- ◆ Introduction and effective enforcement of intellectual property rights. Western or Northern intellectual property rights regimes presently completely ignore the cooperative innovation system traditionally upheld and nourished by the people of the South. This system is significant for Southern countries, in that it contributes to the preservation of agricultural and pharmaceutical bio-diversity, new industrial bases and human survival, in the fuller sense of both global health and productivity.
- ◆ "INWARDS": Integrating neutralized waste as a resource deployment strategy. In order for an economy to be sustainable, industry, agriculture, leisure pursuits and other activities must be based on an enlightened realization of our

Creative use of private sector resources must be harnessed, both internationally and domestically.

planet's meager resources. This implies that all activities must be organized keeping in mind the five principles of "Integrated Chain Management" (ICM):

- Cascading – reuse of materials as long as possible through recycling, with the lowest possible loss of product quality;
- Prevention of environmental degradation, through "upstream" attention to possible environmental problems "downstream";
- Designing products so that they will not have harmful environmental impact;
- Local production of machine parts, with emphasis on reconditioning and retrofitting.
- ◆ Development of environmentally sound technologies (ESTs). New infrastructure is needed to promote the utilization of more sustainable energy sources and to ensure the sustainable use of land and sea-based plant and animal resources. This can help gradually eliminate local pollution, reduce global pollution and prevent depletion of the natural resource base. Since knowledge of available resources is a prerequisite to infrastructure development, national personnel need to be trained to map these resources and determine what is environmentally sound. Catalysts can assist in this process by introducing and testing innovative mapping concepts and by training personnel.

Table 3 – Development and Catalysis, Conclusions

Focus Areas	Catalysis-Driven Effort	Unique-Products-Driven Effort Expected from Catalyst Impact
Poverty Elimination	Mobilization of diverse and remote groups into new viable productive capacities	New productive Intellectual Property Rights strategy
Employment, Sustainable Livelihood	Cooperation with newly recruited non-traditional development partners	Development of unique products for both local and foreign markets
Advancement of women, and other disadvantaged groups	A process of “targeted” catalysis following both traditional and new economic activity	Focus on talents, careers and leadership potential of women
Environmental protection and Regeneration	Environmentally sound technologies – Funds and Channels	Integrated Chain Management for “Inwards”

Conclusions and recommendations

The relationship between the developmental priorities of the countries of the South and the notion of catalysis to develop unique products is summarized in Table 3.

Bridging the gap between scientific and technological potential of the productive capacity of Southern countries and realities of local and foreign catalysts requires a careful choice of strategy and “practical” tactics. Clearly, if a compulsive military service can introduce women and men to new productive careers – during mandatory service – it may completely change the role of the military and its use of science and technology, and also its relevance to poor people and poverty elimination. This needs to be discussed in the context of possible experimentation in the poor countries of Africa and Asia. Foreign catalysts attracted to disciplined and organized systems in countries such as Benin, the Central African Republic or Myanmar will also have the ability to raise the necessary financial and organizational investments to succeed.

In a more systematic vein, the creative use of private sector sources must be harnessed, both internationally and domestically. What a South-driven development initiative needs is to build partnerships that can:

- Elicit financing both for cultivation of agreed-upon strategies and capitalization of “catalysis” and “unique products” efforts in developing countries. Private Sector funds need to be looked at as truly relevant and legitimate resources for the South’s efforts in combating poverty.
- Define concrete “experiments” for joint undertaking of science, technology and design

projects for local poor community and external catalysts, especially for mutual long-term benefit.

- Help define a South-South strategy to use the type of openness signaled by major industrial and professional groups particularly in integrated chain management and its use to complement unique product orientation in developing countries. In this context, the demonstration projects begun by Dr. Gunter Pauli in Tanzania and Namibia (in firms producing beer, mushrooms, earthworms, etc.) recognizes the significance of the concept, as leading to a cooperative strategy.
- Help define new financial sources, as well as in-kind help, to boost the South’s capital resources for employing catalysts and its ability to realize its institutional promise to its clients in countries of both the North and South.
- Help create an image and posture of positive catalysis so that business and banking circles recognize its relevance to their self-interest, enlightened or not. In my dealings with many European financial institutions and the International Licensing Executive Society, I discovered a deep appreciation for the role that a catalyst can play in country development in the South.
- Finally, help train cooperatives, informal businesses and fledgling research and advocacy groups to be aware of their positioning in a volatile world market and prepare them to employ catalysts when required. Attempts to do so in a practical manner by groups such as Team Technologies in Botswana and South Africa demonstrate the clear viability and promise of such a perspective.

What is not recommended at this stage are more expensive, elaborate training programs for "would-be" catalysts. There are plenty of well-identified groups that can tap into the training systems already in place, such as the above-mentioned Empretec programmes of the UNDP.

The future of unique products in the South is as natural and wholesome as any prayer or deed to fight poverty. We simply need to give it our best effort.

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Dr. Ben-Dak's scholarship is equally impressive, both as an academic and as a practitioner with a doctorate in Methodology and Organizational Sociology, and a doctorate in the Program of Research on Conflict Resolution, both from the University of Michigan, Ann Arbor. His academic record includes the Policy Sciences, Planning Sciences and Peace Studies Professorship at the University of Haifa, Israel; the National Research Council Professorship in Technology Planning and Communication at the University of Sao Paulo, Brazil; and the Visiting Senior Scholar (Sustainable Development) at Papua New Guinea's Institute for National Planning. He was elected a fellow of AAAS in Mathematics and Economics and won the US National Academy of Science Dissertation Award for Peace Studies. He has received, among a few honors, the first ever Honorary Doctorate from the Technical University of Mongolia, Ulaan Baatar.

His posts and positions have included:

United Nations: Principal Advisor to the Secretary General, Science and Technology and Public Management, (UNDP, 1992-1997), and the founder and Chief of the United Nations Global Technology Group. Ben-Dak has initiated and established successful sustainable technology and science businesses in numerous countries, including Latin America, Africa, China, Russia, Mongolia and the Arab World.

Metropolis, Paris and Government of France: Co-leader, International Task Force on "Eco-INWARDS and Environmental Technology Management".

Korea: Dr. Ben-Dak was instrumental in the original development and continued programming of Korea's KAIST/KIST, the national center of public and private industrial and scientific planning which has become since April, 2006 the leading financial /planning graduate training center in Korea.

Japan: Dr. Ben-Dak presented the earliest and continuous introduction of technology formative evaluation regime and concerns of sustainable environment to Japan's Ministry of International Trade, MITI [now METI], which includes energy.

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