国际科学园协会
亚太分会1988年会文集

深圳科技工业园总公司编

PROCEEDINGS OF THE ANNUAL GENERAL MEETING INTERNATIONAL ASSOCIATION OF SCIENCE PARKS ASIAN & PACIFIC DIVISION

April 28-29, 1988 SHENZHEN, CHINA

SHENZHEN SCIENCE AND INDUSTRY PARK CORPORATION

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内 容 简 介

兴办科技园以促进国民经济的发展，是近年国际上带有普遍性的发展趋势。本文集汇编了在深圳召开的国际科学园协会亚太地区分会1988年会大会发言及有关材料17篇。来自澳大利亚、新西兰、日本、新加坡、印度、法国及我国的代表在发言中介绍了各自国家和地区组建和发展科技园的经验，肯定了科技园在国民经济发展中的重要性，并就科技园建立和管理中的问题、科技园与大学、工业企业之间的相互作用、以及科技园的发展规划等进行了有益的探讨。这些文章从一个侧面反映了亚太地区科技园的发展进程与经验，可供从事高技术产业开发和研究的专家、学者、企业家及有关专业的院校师生参考。

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大会发言与资料

OPENING SPEECH TO ANNUAL GENERAL MEETING OF IASP ASIAN-PACIFIC DIVISION

B. Orr
Chairman of the Region
Executive Director Technology Park Adelaide Corporation

Mr. Chairman:

Thank you for your kind invitation to speak. I am indebted to SSIPC and to Mr. Zhang and his excellent staff for organizing the conference:

Also I am delighted to see so many delegates here. First of all it is encouraging to see the extent of interest in the science park concept in China.

As well as the lead being set by our friends in Shenzhen I am aware of some developments in Shanghai which incorporate many elements of a science park and I look forward to hearing more about other Chinese initiatives during our conference. Secondly it is good to see so many delegates from throughout the Asian-Pacific Region.

This region does not have the geographic or political consciousness of Europe or North America. Travel distances are great and there are frequently political sensitivities. Yet we have here today in Shenzhen, China. A group of professionals in this exciting new field, from as far away as New Zealand, Australia and India and from such diverse economies as Korea, Japan, Singapore, Malaysia, Philippine, Hong Kong and of course China.

We are also pleased to welcome the president of our European division Messieur Pierre Yues Tesse. I know that the international president Mr. Michael Ryan was very disappointed that the uirement to undergo surgery prevented him from joining us as well.

It is a measure of the vitality of the Asian-Pacific Regional Group that we are attracting attention from such a wide spectrum of interests.

The overriding theme of our conference is international cooperation. Cooperation across national boundaries to learn from each other in a very young field of activity. The encouragement of international alliances for the enterprises we nurture in our science parks. The recognition that in commercializing new technology we must all look beyond national boundaries both to develop the technologies and to gain access to grasp opportunities.

This is the second Asian-Pasific Regional Meeting of the Association. We called a meeting in Adelaide Australia just over a year ago More in hope than expectation. The response then was encouraging. Now it is more than encouraging. I think it is fair to say that this regional group of the association has now come of age and I believe we can now look forward to establishing its activities on a sounder basis. This is a matter which members will address in the A.G.M. this afternoon.

Let me conclude by wishing us all a productive and enjoyable conference and to once again thank the SSIP for its great efforts in arranging this event

Thank you!

深圳市周溪舞副市长的贺词

大会主席、各位代表、女士们、先生们：

国际科学园协会亚太分会1988年会，今天正式召开，我代表深圳市政府向大会表示热烈祝贺，并对来参加会议的各国代表表示热烈欢迎。

这次大会将交流各国建立和发展科技园的经验，寻求亚太地区高科技产业的国际合作，为加速科技研究的商品化进程起重要作用。建立和发展高科技工业园区，在我国仅是刚刚开始。由于高科技工业园的旺盛生命力，近年来发展很快，各国建立了很多高技术工业园。澳大利亚、日本、新加坡、新西兰、南朝鲜等国在建设科技园方面有很多成功的经验，值得我们借签。这次大会也为我们提供了很好的学习机会。

深圳是我国发展最早的经济特区，在开放政策指引下，深圳经济建设面貌日新月异，几年的建设，将一个边陲小镇变成了一个初具规模的现代化新城市。1987年工业总产值已达57.6亿元，其中电子工业产值占45%，轻工、纺织、机械、医药、食品、饮料、石油化工、建筑材料等工业也占有重要地位。拥有大批新住宅、高级商场、豪华宾馆和现代化中西式旅游服务设施，投资环境日趋完善。近几年我们从全国各地调进各类科研与工程技术人员2万多人，大大加强了深圳市的科技开发能力。国际科学园协会亚太分会会议在深圳召开，这是我们深圳市科技界的光荣和对深圳的重要支持，也是各位代表进一步了解深圳的好机会。我们欢迎各国代表和国内各个行业来深圳合作。最后预祝大会成功。

中国科学院李振声副院长的讲话

女士们、先生们：

今天，国际科学园协会亚太分会88年会在风景秀丽的深圳西丽湖渡假村隆重召开，我代表中国科学院表示热烈祝贺！

随着世界经济和科技的飞速发展，世界各国越来越认识到发展高技术产业的重要经济和战略意义。近十多年来，亚太地区各国都很重视发展自己的高科技产业，相继建立了各种类型的科学工业园区，对促进本国经济的发展起着重要的推动作用，并取得了可喜的成绩。国际科学园协会亚太分会88年会的召开，为亚太各国交流发展高科技产业的经验，探索各国发展高科技产业的合作途径，提供了良好的机会，也为中国科技工作者和科技企业家提供一个难得的学习机会。这次会议的胜利召开，必将对亚太地区高科技产业的发展和科学园区的建设，产生深远的影响。

近年来，中国科学院在我国科技体制改革方针的指引下，把科技力量推向国民经济建设的主战场，十分重视高技术产业的开发工作，建立了各种形式的开发公司200多个，开发出一批有竞争力的高技术产品。深圳科技工业园的建立，是中国科学院和深圳市政府合作，利用各自的优势，共同发展我国高科技产业的一个有益尝试，得到广东国际信托投资公司的有力支持，参与合办科技园总公司，促进了深圳科技工业园的发展。这次亚太分会年会的召开，为中国科学院和深圳科技园提供了与国内外同行相互交流、向大家学习的良好场所，增加了相互了解的机会，我们非常乐意与国内外高科技产业的专家、学者、企业家开展广泛的合作，为共同推进亚太地区和世界高科技产业的发展贡献一份力量。最后，预祝会议圆满成功。谢谢大家。

国际科学园协会亚太分会88年会简报

为交流亚洲及太平洋地区各国兴建科技工业园的经验，寻求亚太地区各国发展高技术产业的合作经验，国际科学园协会亚太分会1988年会于1988年4月28日—29日在中国深圳召开。会议由深圳科技工业园负责主办，并得到了亚太地区各国的积极支持。来自中国，澳大利亚、新加坡，新西兰，菲律宾，马来西亚，日本，印度，南朝鲜和香港地区的科学企业界和政府机关的代表共102人参加了会议。亚太分会主席Barry Orr，国际科学园协会主席的代表欧洲分会主席P.Y.Tesse，新加坡科协主席叶福升，香港科委主席潘宗光和中国科学院副院长李振声出席了会议。深圳市副市长周溪舞在开幕酒会上致贺词，李振声副院长发表了热情洋溢的讲话。

会议第一天是大会发言，由亚太年会执行主席、深圳科技工业园总经理张翼翼主持会议。首先是亚太分会主席Barry Orr先生致开幕词，深圳市政府副秘书长曲华代表深圳市政府向大会致贺词。共有12位代表作了大会发言。代表们在发言中介绍了各自国家和地区组建和发展科技园的经验，一致肯定了科技工业园在国民经济发展中的重要性，并且就科技园建立和管理中的问题，科技园与大学，工业企业之间的相互作用，以及科技园的发展规划等方面的问题进行了理论性的探讨。澳大利亚代表在发言中介绍了本国政府发展高科技工业的政策，他认为他们的科技园在未来的10年将对该国的科技发展起决定的作用。新加坡代表在发言中指出组建科技园需要一定的条件和外部环境，不能一哄而上，到处建园。中国国务院经济技术社会发展研究中心的代表介绍了中国发展高科技的政策和与亚太地区的合作。他们的发言引起了到会代表们很大的兴趣。

下午四点半大会发言结束后，亚太分会主席Barry Orr主持了国际科学园协会亚太分会理事会会议，会上选举了88—89年度的理事会成员，并对下年度的工作程序进行了安排。

29日上午，与会代表参观了深圳工业展览馆和深圳科技工业园。各国代表详细询问了深圳科技工业园的组建情况，发展规划。深圳特区和深圳科技工业园的发展给代表们留下了深刻的印象，在参观过程中，不少代表向深圳科技工业园的负责人表示要建立进一步的合作关系。

29日下午的会议议程是分组讨论。讨论集中在四个专题：1.各国发展科技园的经验。2.寻求亚太地区的高科技产业的国际合作途径。3.如何加速科技研究的商品化进程。4.深圳经济特区政策和深圳科技工业园投资指南。讨论会进行得十分热烈。代表们踊跃发言。澳大利亚和新西兰的代表提出了与亚太地区各科技园交流学者的一些方法以促进国际合作；香港代表们就如何预测科研的商品化前景提出许多有益的看法。这些都引起了到会者的关注。代表们对深圳特区的政策和如何与深圳科技工业园合作的问题非常关心。

下午六时大会闭幕，亚太分会主席Barry Orr先生致词，祝贺这次大会圆满成功。代表们一致认为这次大会时间虽短却为亚太地区各科技园之间的经验交流，相互了解提供了一次良好的机会，对各国科技园在制定发展规划和建立合作互利关系方面有很大的帮助。各国代表对这次大会主办人的精心安排表示感谢。

国际科学园协会亚太分会88年会
组织委员会名单

主任委员(Chairman)：

张翼翼，深圳科技工业园管理委员会委员，深圳科技工业园总公司总经理

(Zhang Yiyi, Director of the Board of Directors of Shenzhen Science & Industry Park, General Manager of Shenzhen Science & Industry Park Corporation)

委员(Members)：

邱德标，深圳科技工业园总公司副总工程师

(Qiu Debiao, Vice Chief Engineer of Shenzhen Science & Industry Park Corporation)

古远齐，深圳科技工业园总公司总经理办公室主任

(Gu Yuanqi, Director of Office for General Manager, Shenzhen Science & Industry Park Corporation)

陈汉欣，深圳科技工业园总公司副总工程师

(Chen Hanxin, Vice Chief Engineer of Shenzhen Science & Industry Park Corporation)

丘雪明，深圳科技工业园总公司技术发展部副经理

(Qiu Xueming, Deputy Manager of R & D Department, Shenzhen Science & Industry Park Corporation)

袁尔玫，深圳科技工业园总公司秘书科副科长

(Yuan Ermei, Deputy Director of Secretary Section, Shenzhen Science & Industry Park Corporation)

THE ROLE OF SCIENCE PARKS IN ECONOMIC AND INDUSTRIAL DEVELOPMENT

P.Y. Tesse
Chairman of the European Division,
International Association of Science Parks

Mister president, ladies and gentlemen,

Thanks for your invitation. I'm going to try to replace Michael Ryan, our chairman, who was supposed to talk about the role of science parks in economic development.

I've accepted this challenge, even if the subject is very ambitious, and I will develop three points:

Firstly, a look at the fundamental models of basic science parks;

Secondly, some elements on the effects expected and those actually obtained;

Thirdly, the conditions required to obtain them.

As I am the chairman of the European Division, I will conclude with the role of science parks in the new deal of Europe 1992, the unification of the European market.

* * *

I am not going to try to cover everything in this field of exploration. I would just like to cover a few specific points and I hope this will lead us into an open debate about them.

I. Several Designs or Models of Science Parks

It is clear that science parks have been steadily growing and around eighty of them have joined our association. In Europe alone I estimate the total number of realisations and projects at more than one hundred and thirty. Thirty-five of which, are located in Great Britain, twenty-two in France, and more than forty in Germany.

The reason for this great expansion is due in part to the

1. Successful development of the famous ancestors, silicon valley and route 128 (one twenty-eight) where the magic triangle of university and research, venture capital and new "entrepreneurs" was observed...

This design may be characterized as follows:

But it's important to note that these two examples are exceptional because

Firstly, They were more spontaneous than calculated;

Secondly, They benefited from a breathtaking growth based on special technological discoveries and know-how such as the microchip, and special state government aids;

Thirdly, And finally, one often tends to forget the thirty years period of gestation and implementation that was required in these two cases.

Nevertheless, be sure not to underestimate the role played by the university research centers in these two cases.

Since then, the design has varied especially as a result of actors who started the process. Two

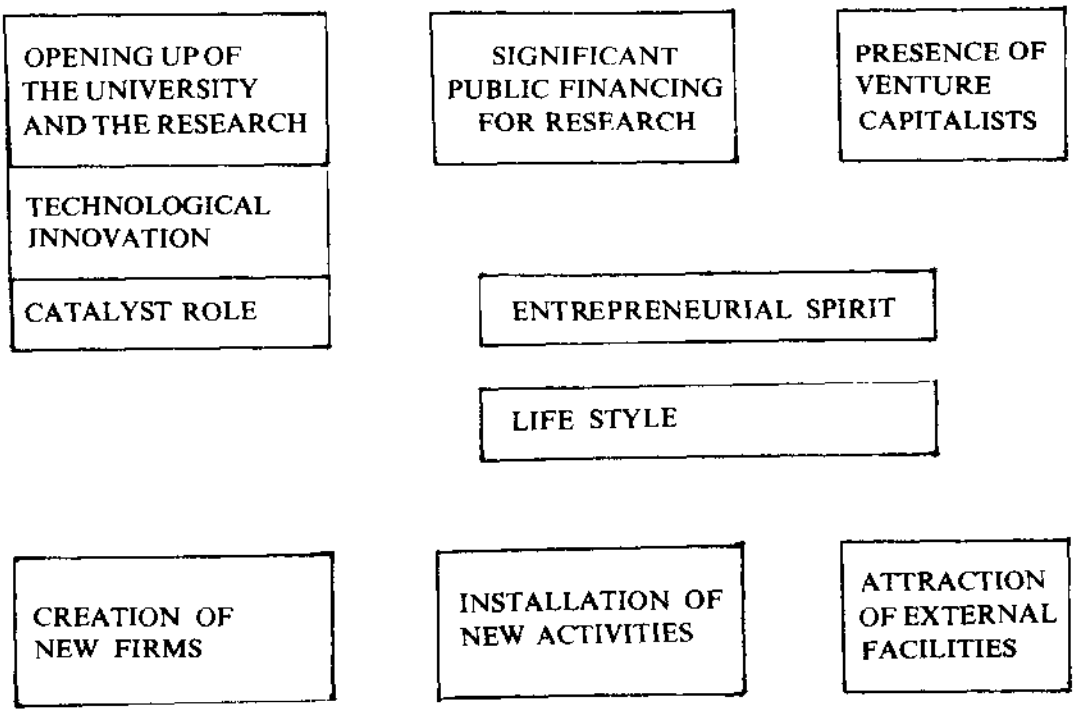
other designs can be distinguished.

SCIENCE PARKS IN EUROPE

United Kingdom	35	Sweden	
France	22	Finland	
Germany	40	Norway	1
Italy	5	Netherland	3
Spain	5		
Ireland	1		
Belgium	2		

Worldwide Members of International Association of Science Parks 80

'SPONTANEOUS' MODELS



2. The second model can be seen in old industrials urban areas. The slowing down of industrial development led local authorities to start tapping local resources. They identified research centres, universities, but found a low number of new tech firms based on technological capacities existant in these research centers.

Also they decided to implement new sites for these activities.

An example of this case is Lyon.

We give special consideration to network creation to reinforce relationships between research centers and industry, by type of activity: biology, composite materials, etc... before realizing new science park sites and incubators.

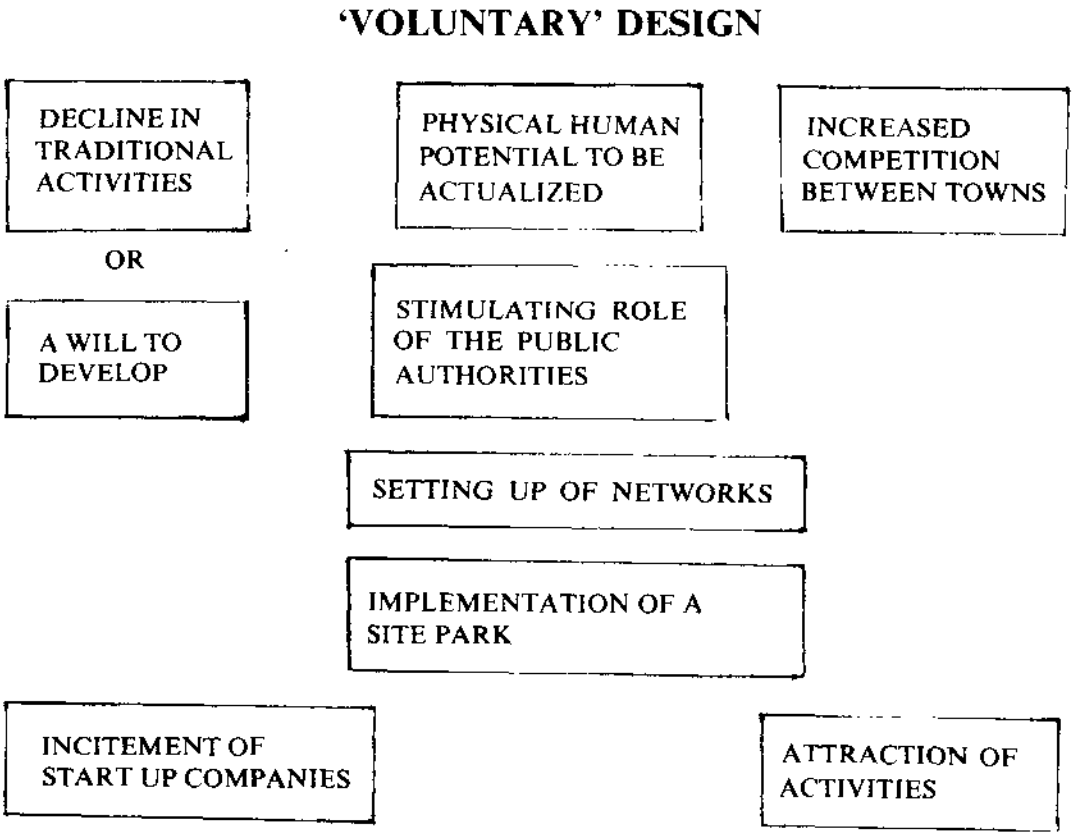
3. The third model is this of a new urbanisation: the will of local and national authorities to create new development poles expressed in the creation of high tech sites and new corporate high tech facilities "Ex Nihilo".

An example of this case in Europe is Sophia Antipolis created in 1969.

4. Just taking the European operations which I know very well, the complete range of all types of sites is represented.

First incubators: in these the creation of local high tech companies is privileged. The links with the closely university are the base of these creations (Ex Tronheim, Norway).

Research parks originate in universities, exclusively oriented towards the reception of transfer activities from the academic laboratories are the second identified type (Ex Heriott Watt, Edinburgh).



TYPES OF "SCIENCE PARKS"	LOCAL FIRMS	EXTERNAL FIRMS	EXAMPLES
INCUBATOR			TRONHEIM (NORWAY)
RESEARCH PARK			HERRIOT WATT (SCOTLAND) LIMERICK (IRELAND)
SCIENCE PARK			CAMBRIDGE (ENGLAND) BIOPOLE GERLAND LYON (FRANCE)
INTERNATIONAL			SOPHIA ANTIPOLIS (FRANCE)
BUSINESS PARK	"EXTERNAL" FIRM		
TECHNOPOLE MULTI-SITE STRATEGY			RENNES/LYON (FRANCE)

Science parks are often conceived along wider lines, and welcome activities and companies of external origins, applying a selective policy based on the possibility of relationships with the surrounding universities and laboratories (Ex Limerick, Ireland — Biopole of Lyon, France)

International business parks may embrace these various functions, but they are mainly oriented towards the attraction of "overseas" activities, and sometimes have a scientific connotation.

And finally, I would like to mention two other categories: the technopoles in old urban regions dotted with all the following ingredients: universities, research centers, innovative companies, venture capital give greater importance to the network effect.

The last type but not the least is the new urbanization which includes all the required functions.

5. The complexity of analysis of the role and effects of these operations is due both to their diversity and the youth of a great number of them, as I previously said.

— Technological transfer is a long term enterprise such as setting up companies stemming from research laboratories

— The mobilization of energy to create an entrepreneurial climate may be more easily evaluated over 10 years than over 2 or 3 years.

II. Effects of Science Parks

Now I'd like to study the effects expected from a science park and to appreciate them by analyzing the formal results of certain operations.

Science parks may be seen as the driving force behind economic development since they rely on the fundamental characteristics of our economies: Generation of wealth by provoking a technological renewal through a better transfer between research and companies.

Based on the idea that proximity favours cooperation and relationships, they try to develop direct and indirect effects.

1. Among all direct effects, the first one would be the creation of new companies coming from universities and research centers.

The example of British science parks shows that 17% of all the firms located in such parks stem from universities, but if you only take into account the new companies, it actually represents 40%.

2. The second effect is the establishment of companies not originating from universities but wanting to work with research laboratories.

This attraction effect is the most significant one where the number of companies and job created is concerned.

The technological pole in the region of Twente in the Netherlands attracted more than 60 companies in the last six years.

MAIN EFFECTS OF SCIENCE PARKS

DIRECT EFFECTS

ON THE SCIENCE PARK

ACTIVITIES AND EMPLOYMENT

- CREATION OF NEW FIRMS BASED ON TECHNOLOGICAL TRANSFER
- ATTRACTION OF EXTERNAL CIES
- ATTRACTION OF SERVICE INDUSTRIES

OTHER MODIFICATIONS

- STIMULATIONS OF LOCAL RESEARCH
- ADAPTATION OF THE EDUCATIONAL SYSTEM

AT THE PERIPHERY

- DIFFUSION OF NEW TECHNOLOGIES IN TRADITIONAL ACTIVITIES
- TRANSFER OF ACTIVITIES DEVELOPED IN THE INCUBATORS

INDIRECT EFFECTS

- DEVELOPMENT OF SERVICE COMPANIES AND ACTIVITIES
- MOBILIZATION OF LOCAL ACTORS
- IMPROVEMENT OF THE IMAGE OF THE TOWN

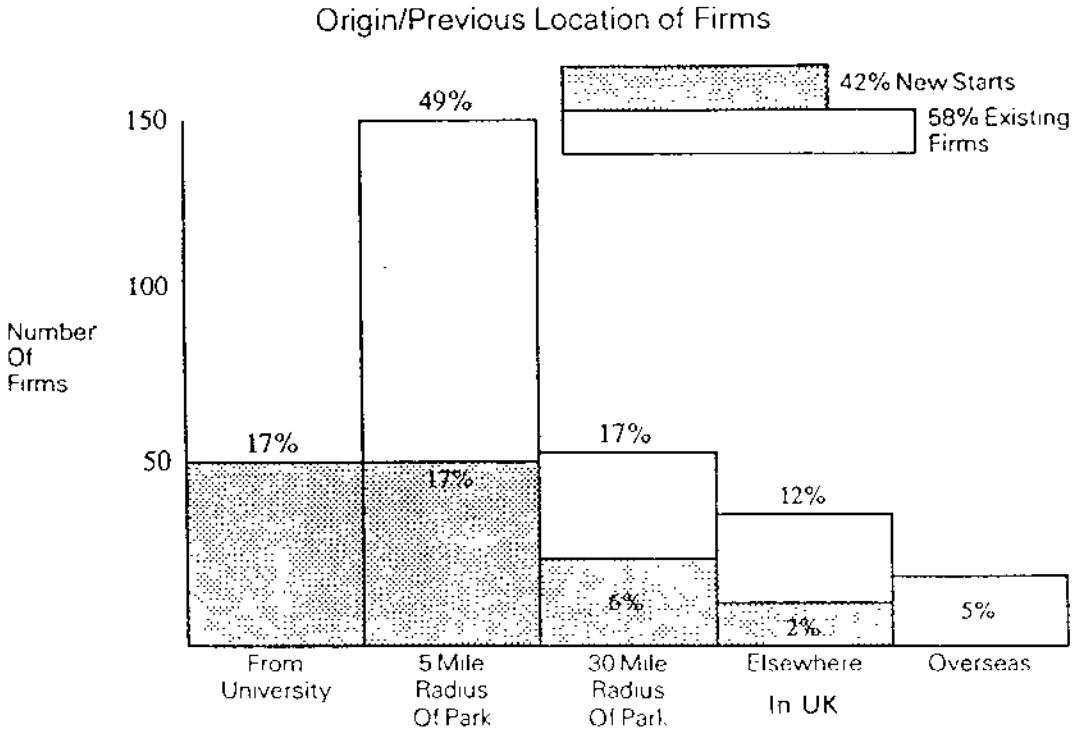
In the same way, the biopole of Gerland in Lyon, France, established in the proximity of two engineering and research institutions, generated in the last 4 years the establishments of 50 companies, 16 start-ups and 34 facilities of external companies. The biopole also reinforced the position of the already existing companies on the site, with the creation of 1800 jobs.

3. One also notices in numerous cases the cumulative phenomenon created by the stimulating image of science parks which in turn attracts service industries.

The Science Park in Grenoble near Lyon, France, is a significant example of this.

Over the last 14 years, 3,300 jobs have been created there, 1,130 of them in two large centers, the first specialized in research in telecommunications and the other in industrial research. To date, the technological companies number 70 and have created 1,710 jobs, and have also attracted 50 service companies, which created an additional 460 jobs.

This corresponds to the immediate tangible effects of a science park which may be easily evaluated.



4. But I would like to mention two other direct effects which deserve much more attention. The first is the adaptation of the educational system according to corporate needs for skilled personnel. 60% of the employees in the Cambridge Park are scientists, engineers or executives. The situation is the same for the first operation in Grenoble.

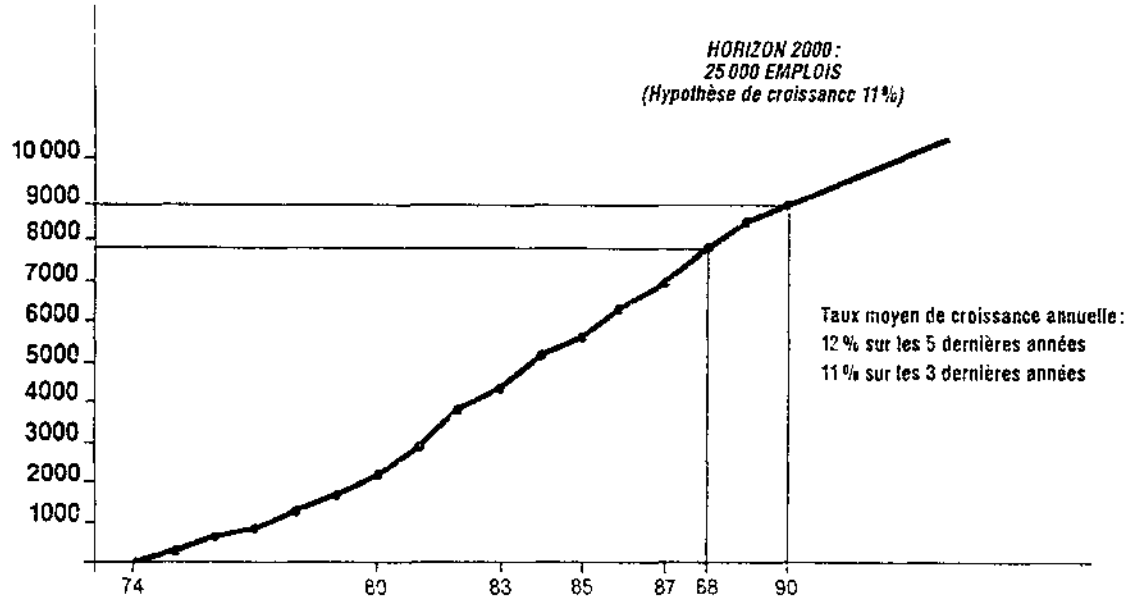
TONY GARNIER SCIENCE PARK

	DEFORE 1985	1985	1986	1987	1988 4 MTHS	TOTAL
CREATION OF NEW FIRMS		2	3	10	1	16
NUMBER OF JOBS		14	164	77	6	261
ATTRACTION OF ACTIVITIES	5	4	6	19	5	39
NUMBER OF JOBS	615	71	131	359	912	2 349
EXISTING COMPANIES	11					11
NUMBER OF JOBS	3 041					3 041
TOTAL	16	6	9	29	6	66
	3 656	85	295	436	918	5 651

GRENOBLE SCIENCE PARK (AFTER 15 YEARS)

Big companies	2	1 130
High tech cies	70	1 710
Services industries	50	460
Total	122	3 300

EMPLOIS DIRECTS SUR LE SITE: EVOLUTION ET TENDANCE



Secondly it stimulates local research by helping researchers to realize the purpose and necessity of technological transfers. Setting up a technopole action plan in the region of Lyon led to the general animation, and implementation of park sites encouraged lots of laboratories and academic labs to have studies carried out by transfer experts to better define their know-how and the transferable research results, i.e. 17 out of 30 at the national institute for applied science accepted this technological audit.

5. And now I would like to discuss some other effects which one should not be neglected.

I will also classify the effects of introducing new technologies into the traditional activities of an urban region as a direct effect.

But honestly speaking, this effect seems to me to be unquantifiable, and lots of parks are too new to allow such a precise identification.

Several park managers in France were requested by the delegation for national and regional development to use the science park as a tool of demonstration, training and transformation of the traditional local industrial environment, notably this is the goal laid down by the president of the