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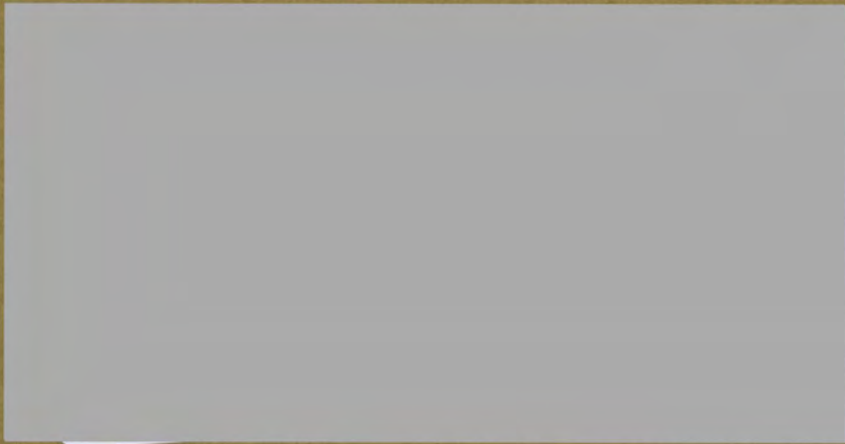


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The World Bank  
1818 H Street NW  
Washington DC 20433  
Telephone: 202-473-1000  
Internet: [www.worldbank.org](http://www.worldbank.org)

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Piccagli, MARIO - ARTICLES and speeches (1968)



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PICCAGLI

*Piccagli - special*

NEWS SERVICE

INFORMATION AND PUBLIC AFFAIRS DEPARTMENT

This news story appeared on page 52 of the AUGUST 1968 issue of:

- THE NEW YORK TIMES
- THE WALL STREET JOURNAL
- THE JOURNAL OF COMMERCE
- THE WASHINGTON POST

- THE CHRISTIAN SCIENCE MONITOR
- THE TIMES
- THE FINANCIAL TIMES

*THE CONSULTING ENGINEER, LONDON*

WORLD BANK INTERVIEW

# International misconceptions . . .

*Mario Piccagli explodes the myth surrounding the role of consultants in international development in this exclusive interview with 'The Consulting Engineer'*

The recent Fidic general assembly at Wiesbaden invited several eminent figures in the field of international development to attend their meeting as guests and CE's man-on-the-spot secured this exclusive interview with one of them—M. Piccagli, assistant director of engineering at the International Bank for Reconstruction and Development.

Mr. Piccagli recently took over from General Vogel who retired from the position to go into private practice, and his views and comments on the World Bank and its connection with consulting engineers throw a new light on some widely held misconceptions.

Contrary to many beliefs the Bank does not advise, recommend or even employ consultants other than infrequently on a transportation study. It maintains a position of complete impartiality and limits its role to warning a borrower if he is proposing the selection of a consultant lacking the necessary qualifications or capability.

**C.E.:** It has been said that professional men today seem to be searching for some new concept of consulting engineering. Is there a need for a new form of practice and if so how do you feel firms can best change to meet the needs of an organisation like the World Bank, or in their present form do consulting engineers fulfil the complete need of your organisation?

**Piccagli:** First of all, it may be well for me to say that any comments I make about consultants or consulting engineers are in the context of the fairly large firms of consultants, say with staff numbering in the hundreds. These are the ones more generally concerned with work of interest to the World Bank. It is particularly important to make this distinction in view of the framework of this meeting of FIDIC, where the individual consultant and the small consulting office are still a very prominent participant.

The kind of change which I think may be required is not something so drastic as a new form of practice. My impression is that if change is needed it is more of an evolutionary adjustment. I have at times felt that while engineering has become an industry, many who are concerned with it still think in terms of concepts which used to apply to the consulting engineer as an independent consultant but no longer apply to the large consulting

firm. I do not think consultants should worry too much about meeting any specific requirements of the Bank, though if they did meet our requirements they would probably be very well placed to meet present-day demands placed on consultants by the average client.

**C.E.:** Are there any particular criteria in a firm that you can define as fitting the form of consulting engineer that the Bank uses?

**“... in the past the most important shortcoming the Bank has found in practically all consulting engineer firms has been in their experience and ability to deal with economic aspects of project work...”**

**We say that we will not, except in very unusual circumstances, accept a turn-key contract”**

**Piccagli:** In the past the most important shortcoming the Bank has found in practically all consulting engineer firms has been in their experience and ability to deal with economic aspects of project work. I think there is a clear historical reason for this. In the past the average clients were experienced governments or companies that considered and made the basic investment decisions—the determination of which projects to execute, and when. They used consultants to look after the design and construction requirements. The World Bank is asked to finance projects proposed by governments which are often relatively inexperienced and it consequently asks for review by independent consulting firms not only of design but of the basic investment decision which involves economic as well as engineering considerations—the need for a project in a sector of the economy of the country; which project is the best choice among often numerous alternatives.

This scope, at least with the frequency and depth recurring in our work, has necessitated an important addition to the consulting engineers' traditional scope of work. Over the last few years much progress has been achieved by many firms in acquiring this capability, but from where we view the scene the process looks far from completion. Except for this one problem, the other features the Bank looks for are good reputation, independence and sound experience of the firm in the type of work

in question but above all, choice of well-qualified personnel for assignment to the project.

**C.E.:** The industrialist has a choice for his consultancy between using an independent consultant or going to the package dealer. You don't have that choice. Generally speaking, could you tell us why?

**Piccagli:** We don't have that choice because we have made our choice. We say that we will not, except in very unusual circumstances, accept a turnkey contract. I take it you are aware of the fact that the policies of the Bank demand that the utilisation of its loan funds has to be on the basis of international competitive bidding. This practically rules out turnkey arrangements.

**C.E.:** But do you find from your experience that there are ever occasions when you regret it, where you would prefer to use the package dealer. Or has your experience of engineers been such as to confirm you in the belief that it is best to use consultants?

**Piccagli:** To answer your question directly I would say that in my experience I have not had occasion to question this approach, much less regret it. To be sure, ours might become a ponderous approach in the case of extremely small projects which only occur as exceptions in the Bank's operations. There is no question in my mind about the desirability of independent design and construction supervision, even though not infrequently the quality of performance by consultants is closer to the level of humdrum mediocrity than to that of brilliance.

**C.E.:** Do you see one of the problems here as being that the very large firm hasn't got itself organised to give a service that a lot of large industrial organisations can give? An administrative problem inside a partnership?

**Piccagli:** I would answer no to the first part of your question. As to the second, I think the problem is rather one of scale of operations. Large projects are rather naturally handled by large firms, which have to maintain large staff groups, where efficiency of operation: conflicts with individuality of approach, and where the senior people, who represent the experience and accumulated wisdom, often have to spend too much of their time worrying about keeping the large staff fully occupied. It's a bit of a vicious circle. What I am contrasting here is the invaluable contribution with the imprint of genius at times made by a consultant (I am thinking for example of Andr Coyne and his scheme for diverting the Zambesi at Kariba) with the much more down to earth day-in, day-out performance of the average staff group in a large consulting firm. On the other hand, it is important to understand the however uninspired the industrial output of large firms may be, it gives the inherent assurance that nothing can go very far wrong.

**C.E.:** Can you tell us something about the way in which the Bank works and about the areas

## NEWS SERVICE

CONTINUATION (FROM CONSULTING ENGINEER, LONDON, August '68)

## INFORMATION AND PUBLIC AFFAIRS DEPARTMENT

In the world in which the Bank is spending most of its money or has a large consultant utilisation at the moment?

**Piccagli:** The Bank finances projects that can be shown to be of high priority and with sound economic justification in the key sectors of the economies of borrowing member countries. Once projects which may be suitable for Bank loans are put before the Bank, after conclusions on sector priorities and country creditworthiness have been formulated by those responsible for such phases of the work in the Bank, the appraisal of the projects is entrusted to the appropriate division of the Projects Department of which I am assistant director for engineering. The Department is organised by sector speciality, so there is an Agricultural Division, an Education Division, a Public Utilities Division and a Transportation Division. In each case, the division responsible will assign a new project to a team that will be with it right through to the end of its handling in the Bank. This team is generally made up of an engineer and a financial analyst, with or without economist assignments depending upon the project economic work there is to be done.

**C.E.:** At what point does the consulting engineer come into the picture?

**Piccagli:** First of all let me say that there does not necessarily have to be a consultant in the picture. The Bank will make a judgement in each case whether the capabilities of the borrower need to be supplemented by consultants. In practical terms, years ago when the Bank was lending to countries like Japan, Austria, Norway or Italy with well-developed and capable institutions as borrowers, it frequently found that the borrower's own capabilities were entirely adequate. More recently the bulk of the Bank's work has shifted to countries in, say, Africa where there is almost always a need for the services of outside consultants to supplement the borrower's own staff. In view of the fairly precise definition of a project which is required for Bank consideration to begin, I would say that where a consulting engineer is needed, the chances are that he would come into the picture before the Bank does.

**C.E.:** So that the Bank's role in this at the very most could be to recommend a consultant, but even this is fairly rare. Normally it just approves the consultant.

**Piccagli:** Correct. The firms of consultants interested in being considered for needs arising out of Bank projects number hundreds in each sector of activity. A file the Bank keeps of firms actively interested in Bank's project work lists nearly 3,000. The Bank would have no chance of being fair to all suitably qualified firms if it undertook to make any recommendations; and since it should maintain a position of impartiality it has no choice other than to limit its role to that of warning the borrower if he is proposing the selection of a consultant lacking the necessary qualifications or capabilities.

**C.E.:** Would you say that in many ways the Bank is indirectly the largest employer of engineering services, but that consulting engineers generally do not really consider or indeed try to find out the way in which the Bank works?

**Piccagli:** I would not want to agree that the Bank is the largest indirect employer of consultants because I do not know that it is. Yes, I believe that many consulting engineers do not know enough about how the Bank works.

**C.E.:** Does the Bank feel that the onus is on them to inform engineers?

**Piccagli:** Indeed, and it tries to disseminate the information by the widest possible distribution of a brochure *Uses of Consultants by the World Bank and its Borrowers* in which the policies of the Bank in respect of the use of

consultants are summarised. There is also in my offices a consultant services officer. He sees and talks to a great many representatives of consultants who come to visit the Bank in their endeavour to draw attention to their capabilities and to be informed of possible need for consultants' services. It is a real and serious problem for consultants to find out in good time where services may be required and they of course would find it very convenient to come about this type of information in a central location like Washington. As I have mentioned earlier, though, this is not possible.

**C.E.:** So that in fact consulting engineers really ought to be applying their selling talents to potential clients.

**Piccagli:** This is what we try to tell them.

**C.E.:** Do you get many projects which have been in fact thought up initially by consultants and sold to a government?

**Piccagli:** Yes, I think there are quite a few. The problem is that consulting engineers

“The Bank keeps no list of approved consultants . . .

A file the Bank keeps of firms actively interested in World Bank project work lists nearly 3,000 names. . . the Bank would have no chance of being fair to all suitably qualified firms if it undertook to make recommendations.”

often promote projects which are physically and engineeringly attractive but for which there is no real economic justification, generally in the sense that they are proposed years too soon. This has been one of our greatest problems.

**C.E.:** Is it possible for the consulting engineer who gets involved in one of these schemes to come to the Bank and talk about it at an early stage?

**Piccagli:** It is possible and it happens but I think it is not very useful unless it is done with the full knowledge of the country and in fact on its behalf. You see, as we discussed earlier, the Bank will only lend for projects of high priority in the framework of the country's overall economic requirements. For this reason an initiative that by-passes the planning process, whether such process is formal or informal, is not one that would readily fit the Bank's operating policies.

**C.E.:** I have heard it said that if a consulting engineer is engaged on a feasibility study for a project then it is unlikely that the Bank will recommend him to do the supervisory work.

**Piccagli:** The Bank has more to say on the selection of consultants for pre-investment, or feasibility, work than it does for project work and where the Bank is responsible for hiring a consulting engineer to do pre-investment work, it generally will put before him as a condition that he should not seek design and construction supervision work on projects stemming from the feasibility studies. We do this to try and ensure objectivity in the findings of the feasibility work.

**C.E.:** Do consultants take on feasibility studies on those terms?

**Piccagli:** They do. The condition often sounds extreme but in my experience the Bank has been fair and reasonable in its interpretation.

**C.E.:** On the question of feasibility studies, you said you are much more involved in actually hiring the consultants. Are there many of these projects in progress?

**Piccagli:** Not really very many, perhaps ten or so each year and most of them in the transportation sector. Most of these studies we undertake as the executing agency of the United Nations Development Programme. Generally UNDP use as executing agencies some of the United Nations organisations who prefer to do the work directly, by hiring individual experts. The Bank has always accepted the responsibility of executing agency on condition that it would give the work out on contract to consulting firms. Initially we expected the government to select consultants and be the contracting party but recently we have changed that around and now we make the selection and sign the contract.

The work involved is really long-term planning in highway development and maybe a couple of times a year may involve a complete transport co-ordination study. This is preliminary to project design engineering. It is really economic planning.

**C.E.:** We would like briefly to talk about the question of fees themselves. You see fees going through and without wanting to get involved in detail, can you tell us is there a great disparity between the charges made in different countries for similar services?

**Piccagli:** Unfortunately not: from my viewpoint they all seem too high. There is a great deal of levelling in the world on this. This is not to say that I think improper charges are made, but rather that the efficiency of the system is poor. Also, on this general subject, I question the justification of fee systems based on pre-determined percentages of the cost of the project, particularly as the intensity of services rendered varies widely among different projects. Another reason for the high cost is the high bonuses and overheads involved in obtaining the services of capable people away from their own country.

**C.E.:** Different countries have different characteristics. In the field of consulting engineering have you been able to detect a pattern emerging which suggests that some countries generally tend to provide a better service than others?

**Piccagli:** There is much more variation from firm to firm in the same countries than between firms in different countries, and it would be completely unreasonable to try to categorise countries.

**C.E.:** Currently there is obviously a move for people to say, let's all get together and have international standards and scales. Do you see this as more practical now than it might have been 50 years ago?

**Piccagli:** I don't know. I don't really by my own convictions approve of international scales and standards any more than I do national scales and standards of charges. If you will remember that I said at the beginning that I would be speaking about the large firms and not the individual consultants and small technical offices, I would go back to the thought I expressed before that in my view this is now an industry and not a profession. Whether they will admit it or not, firms are very much in competition with one another to get the available work and their motive is profit making. This is the way it should be. All I am saying is that the real problems would probably be identified and solved more readily if this were more openly recognised instead of trying to continually applying archaic and obsolete connotations and concepts.

**C.E.:** You feel then that engineers have got to learn to be better businessmen.

**Piccagli:** Perhaps they already are very good businessmen—what they should do is stop pretending they are not.

Information (From Consultant's Experiences, London, August 68)

INFORMATION AND PUBLIC AFFAIRS DEPARTMENT

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The consulting Engineer London. Mr. Picaselli.

*Mrs. Eliason*

Atomic Industrial Forum

Panel on

"International Aspects of Financing Nuclear Power Plants"

November 13, 1968

Mario Piccagli  
Assistant Director - Projects Department  
World Bank



The abbreviated summary of the topic chosen for this Panel's discussion focuses essentially on two questions - how funds are made available and how the cost of money affects plans for nuclear stations. I assume that it is postulated when we discuss "International" aspects of financing that the context of the Panel's discussion is mainly nuclear plants built outside the country that supplies the equipment. I believe the most useful contribution that I can make is by presenting those aspects of this question, and views on them, that are typical of the World Bank's approach to project financing.

While there have been too few export plants built to establish anything like a trend, the "how" of financing so far has been through the medium of bilateral export financing institutions of the supplying country, or supplier's credit, or a combination of the two. I am inclined to believe that a change in this situation is not impending and that when it occurs it will be slow. I see two main reasons for this.

Up to now most nuclear power plants built even in the countries that have originated and developed this new technology have been built under turnkey contracts. This approach is being abandoned in countries like the U.S. (or at any rate, the principal suppliers no longer consider

it necessary to make this burdensome concession to prospective clients in order to get contracts) but it is quite likely that pressure on reactor suppliers to accept turnkey responsibility will continue in the case of export situations. Next, countries with a nuclear export capability appear anxious to help their manufacturers and prepared to extend attractive financing facilities much more readily for nuclear plant exports than for more conventional exports.

A departure from this approach (and one of the obvious alternatives would be the international competitive bidding approach typical of World Bank projects) would require that sufficient progress be made in engineering, manufacturing and construction practices in this field so that the planning, design and procurement for nuclear plant could be envisaged in the way that is customary for other power plant work. A nuclear power station still has many similarities to process plant work, where the customer and his consultants can have only limited freedom in determining specific design layout, characteristics and performance. Reactors, and particularly the desirable well-established reactors of standardized design, are rather rigid in their size, layout, design and steam conditions. Thus, if a utility wishes to make its choice on the basis of open international competition, it must in essence accept, as far as the reactor is concerned, what the manufacturers offer rather than ask them to bid on its own specifications. This makes it difficult to obtain and properly to evaluate competitive offers of different type reactors, and gives rise to additional problems, such as:

(a) Consulting firms with good experience in this field are not many and they tend to be more familiar with reactor systems developed



in their own country; thus they might have difficulty making balanced evaluations of competing reactors of different types;

(b) The range of steam pressures and temperatures encompassed by competing reactor types is wide. This means that in a fully competitive approach, preparing specifications and obtaining competitive bids for the "conventional" end of the plant (turbo-generator and accessories) becomes a laborious and involved process, as several alternatives should be provided for, corresponding to different types of reactors; the more so as delivery times for the nuclear and conventional sections may require quite different lead periods.

I have no doubt that all these situations are evolving towards more normal (in a utility plant context) status, but the process will take some years.

As to the influence of the cost of money, there are several aspects to the question. It is generally recognized that the higher the cost of money the more difficult it becomes for a nuclear plant to be competitive because its initial cost can be up to twice as much as the corresponding conventional plant (for the smaller size units and in an export context). This leads some to suggest that lower interest rates, or the granting of other concessionary terms, ought to be available to make nuclear installations competitive.

On the one hand, it does not appear justified to use different costs of money in any given utility context for different kinds of plant. On the other hand, it may be, as I mentioned above, that for some time to come the desire of the exporting countries to foster nuclear plant sales by their manufacturers will prompt some to offer more attractive terms for nuclear plant export than for conventional

plant export; when this happens, other things being equal, it represents a concrete advantage which should be given proper consideration. Still another angle to be considered is the economic justification of nuclear as compared to conventional in the context of the national economy, irrespective of how and by whom the utility is owned. In this case one would have to use costs net of duties or taxes, and the additional investment required by the nuclear plant should earn (in the guise of lifetime savings in operating costs) a return not just equal to the cost of money with which the plant might happen to be financed, but rather to a suitably determined opportunity cost of capital. This is almost certainly higher than the rate likely to be offered for financing the nuclear plant and frequently could be two or three times as much. Further complication can, and sometimes should, be introduced if account is to be taken of foreign exchange stringencies in the country.

Clearly, no generalized conclusion can be drawn, as all these viewpoints have some validity and their interaction can only be judged properly on a case-by-case basis having regard to actual circumstances.