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In 1966, when Art and Technology was first conceived, I had been living in Southern California for two years. A newcomer to this region is particularly sensitive to the futuristic character of Los Angeles, especially as it is manifested in advanced technology. I thought of the typical Coastal industries as chiefly aerospace oriented (Jet Propulsion Laboratory, Lockheed Aircraft); or geared toward scientific research (The Rand Corporation, TRW Systems); or connected with the vast cinema and TV industry in Southern California (Universal Film Studios). At a certain point—it is difficult to reconstruct the precise way in which this notion finally emerged consciously—I became intrigued by the thought of having artists brought into these industries to make works of art, moving about in them as they might in their own studios. In the beginning, as I was considering this idea as just an abstract concept, I had few concrete visions of what might actually result from such exchanges. Indeed I was not certain whether artists of calibre would desire such involvement with industry. And if they did, and an organized program could be instituted to give them such opportunities, I had no idea how to go about persuading corporations to receive artists into their facilities—nor for that matter, why they should want to.

In reviewing modern art history, one is easily convinced of the gathering esthetic urge to realize such an enterprise as I was envisioning. A collective will to gain access to modern industry underlies the programs of the Italian Futurists, Russian Constructivists, and many of the German Bauhaus artists. Within these movements, no intensive effort was made directly to approach industrial firms in order to harness corporate machinery or technology, or systematically to expose artists to their research capabilities. Still, the impulse to do this is well documented. A need to reform commercial industrial products, to create public monuments for a new society, to express fresh artistic ideas with the materials that only industry could provide—such were the concerns of these schools of artists, and they were announced in words and in works.

During late '66 and early '67, I began studying the nature and location of corporate resources in California. In November, 1967, I went to the Museum's Board of Trustees, members of which were significantly involved with over two dozen West Coast companies, to outline my proposal and to elicit advice and support. As individual entrepreneurs, the Board members were rather indifferent to the experiment, and as Trustees they resisted having the Museum commit itself, and me, to such an undertaking. The proposal appeared to them too vague and open-ended, and the budget almost impossible to predict. I argued that I would raise personally the great majority of funds to get the project underway, and that if I failed to do this, we would then simply drop the

scheme before it was made public, avoiding any embarrassment or significant financial loss to the institution. Other than on a practical level, I maintained that this project was a proper undertaking for a Museum, and represented an opportunity to play an innovative role. It would draw attention to the acknowledged need in the U. S. for institutions responsive to the interests of society—in this case, the interests of artists, and perhaps even businessmen. The Board gave me tacit consent to go ahead and study the possibilities, with the program still subject to their approval.

I prepared a case with which to solicit corporation involvement, centered on three main lines of approach which I calculated to be of interest to the business community. I argued that corporate donations to the arts, which were infinitesimal compared to support of medical and educational facilities, should be enlarged. This would benefit them, as much as the recipient museums, operas, theatres, etc., since businesses benefit from proximity to thriving cultural resources in attracting talented personnel. I also pointed out that the companies' collaborations with artists might well result in major works of art, and I decided that one work of art made with any significantly cooperative corporation should be offered to that corporation. (It became clear very early that a high proportion of the companies would view this possibility as a salient motive for collaboration.) Most importantly, I argued that companies might benefit immeasurably, in both direct and subtle ways, merely from exposure to creative personalities.

These arguments may have been substantive, but there remained the problem of presenting them to the right people. I had drawn up lists of corporations I felt should be solicited, but it was difficult to obtain appointments with their presidents. (I realized then that it would be fruitless to see public relations people, or anyone other than the man at the top who could sign the check and delegate authority.) In spite of the aegis of the Los Angeles County Museum of Art, it would typically take six phone calls and two letters, over a period of six months, to effect a meeting, and even with such protracted efforts few interviews were arranged. When I did get past the front door, the response from corporation executives was usually encouraging, but the overall rate of progress was much too slow.

In June, 1967, an article in the *Los Angeles Times* mentioned my plan to "bring together the incredible resources and advanced technology of industry with the equally incredible imagination and talent of the best artists at work today." Mrs. Otis Chandler, wife of the *Times'* publisher, was intrigued with the story and telephoned me about it. I asked Missy Chandler for her assistance in arranging appointments with corporation executives. She asked whether the Museum's Board was

not the appropriate vehicle for this operation. Informed that no Trustee had shown much interest in participation when I had presented the Board with my idea, she agreed to help. Mrs. Chandler's intervention proved immediately effective. She became primarily responsible for the involvement of over a dozen corporations in the now accelerated program.

In late 1967, we began the process of contacting over 250 companies, of which eventually thirty-seven joined the program in various ways. As encounters with corporation executives took place, the logistical guidelines and the scope of the program were gradually clarified. I soon realized that, for practical reasons, the program would have to be limited to companies located in the state of California. (Much later, we were able financially to extend outside the state, and companies located in Indiana, Illinois, Ohio, and New York State joined Art and Technology.) We could not, in the beginning, know how much money a company might donate to the Museum's general fund on Art and Technology, before an artist took up residence. We discussed various figures from three to fifteen thousand, before settling on \$7,000 as the amount we would request as each corporation's initial financial obligation. This somehow emerged as the optimal sum, beyond which very few companies would commit. Later, we learned that many corporations calculated their pledge in a ratio of two to one: the \$7,000 donation to the Museum suggested to them an expenditure of \$14,000 to the artist. There was also the question of how long the companies would agree to have artists in their facilities. We realized that most companies, before signing a contract, would want an escape clause in writing to which they could refer should they desire early termination of the project. It would have been preferable to keep this open, allowing the artist and company to themselves decide when to end the relationship. Unfortunately we were forced to see that no company would initially agree to have an artist in residence for longer than three months. Many executives, however, indicated that if the collaboration developed interestingly, they would allow it to continue naturally. In fact, when the artist wanted to extend his residence he was able to do so. Still there was an intrinsic sense of limitation suggested to certain artists by the expectation of a three month project. Anticipating a restricted time span, some artists undoubtedly inhibited the scope of their esthetic conceptions.

Yet another factor needed clarification before we could outline the terms of company obligations. Many executives wanted to know rather precisely how much financial support and staff time would be expected from them after an artist came to work. But it would have been impossible to estimate budgets from companies as diverse as, for example, Rand and Lockheed or JPL and Kaiser Steel. And it was imperative to have identical

contracts with each participating company, as it was to have identical contractual agreements with the artists. We naturally wanted to avoid setting any advance financial limits on collaborations. Obviously a key motive in the program was to allow the chance of one or both parties being stimulated to extend their commitment out of sheer enthusiasm.

Few corporations questioned our total right to select artists for them. It should be noted that corporations had the option to "approve" the artist before he took up residence: such approval is of course implicit, but by making it explicit a certain degree of company wariness was eliminated.

In April, 1968, I met with the Board of Trustees for the second time to deliver a progress report. I anticipated that we could enlist the financial support of at least twenty corporations, to the amount of \$140,000 as a straight donation to the Museum for use as needed in operating the program—to cover artists' payments, transportation and installation costs. According to my prospectus these twenty companies additionally would each take an artist into residence. I requested \$70,000 from the Museum as its share in supporting Art and Technology for the 1968-69 fiscal year. (Perhaps unconsciously, I had adopted the businessman's strategy—but in reverse ratio.) The Board sanctioned the plan, provided that I obtain written agreements from ten corporations before announcing the program officially. I drew up a contract which took into account three different kinds of corporation participation. I knew that certain companies would be eager to have an artist in residence, but for various reasons, often having to do with anticipated stockholder reaction, would elect not to write a check to the Museum. Other companies would financially support the program and might desire collaboration, but an artistic use of their facilities was technically unlikely. We established categories of corporate involvement: Patron Sponsor Corporations, who would agree to take an artist into residence, and also donate \$7,000 to the Museum; Sponsor Corporations, who would take an artist into residence but who donate less than \$7,000 or nothing at all; Benefactor Corporations, asked to simply donate at least \$7,000 to the Museum; and Contributing Sponsor Corporations, who would donate only services, or less than \$7,000. Patron Sponsors had the "option to receive one principal work of art resulting from the collaboration"; the other categories of corporations did not have this option. See Appendix I, p. 31, for the complete text of the Patron Sponsor contract, which differs from the others only in regard to the factors just noted.

A brochure was drafted and printed at this time for corporation executives:

Art and Technology is the working title* of a major project now being planned at the Los Angeles County Museum of Art. The purpose of this enterprise is to place approximately twenty important artists "in residence" for up to a twelve week period within leading technological and industrial corporations in California. Works of art resulting from these cooperative endeavors will be exhibited at the Museum in the Spring of 1970.

International developments in art have provided the impetus for this project: much of the most compelling art since 1910 has depended upon the materials and processes of technology, and has increasingly assimilated scientific and industrial advances. Nevertheless, only in isolated circumstances have artists been able to carry out their ideas or even initiate projects due to the lack of an operative relationship with corporate facilities. Our objective now is to provide the necessary meeting ground for some eminent contemporary artists with sophisticated technological personnel and resources. Naturally we hope that this endeavor will result not only in significant works of art but in an ongoing union between the two forces. It is our conviction that the need for this alliance is one of the most pressing esthetic issues of our time.

During the past six months, we have made numerous preliminary contacts with corporation presidents in California. These discussions have served to corroborate our feeling that the advantages to participating corporate concerns are manifold. Since the project will be fully documented by CBS television for a network special, as well as being systematically publicized through other media, promotional benefits to industries can be considerable. It is expected that collaborating technical personnel may gain experience directly valuable to the corporation, as indeed has already occurred in the plastics industry. All expenses, including corporation staff time and materials, are tax deductible; in addition, Patron Sponsors will have the option to receive a work of art issuing from this collaboration. In many cases, the art works will exceed in value the total expense of the

*The reader will note reference to "Art and Technology" as a "working title." This nomenclature was never comfortably accepted by us. Years later, after lists of other titles were drawn up and discarded, we could not improve on Art and Technology. Terms like "synergy" and "interface" were considered, but abandoned for obvious reasons. We wanted to include reference to industry, but this word invariably summoned misleading evocations of *industrial design*, and that was a confusion we were determined to avoid.

corporation's contribution.

Corporations are asked to participate in one of five categories:

1. A Patron Sponsor Corporation takes an artist into twelve-week residence within one of its corporate facilities to work in a specific area with the corporation's personnel and materials. A Patron Sponsor Corporation also contributes \$7,000 to the Los Angeles County Museum of Art to help defray the extraordinary expenses of the project. As noted above, Patron Sponsor Corporations have the option to receive a work of art issuing from the collaboration.
2. A Sponsor Corporation is a manufacturer who arranges to have an artist work within its plant, using specified personnel and materials, but makes a smaller contribution to the Museum's special fund for the project.
3. Contributing Sponsors donate materials and/or services to the Los Angeles County Museum of Art for this project but do not take an artist into residence.
4. Service Corporations provide specialized services such as transportation, housing facilities for visiting artists and technical consultation.
5. Benefactors are non-technical, non-manufacturing firms who donate \$7,000 to the Museum's special fund for "Art and Technology."

Industries located primarily in Southern California are now being approached for their cooperation. By May, 1968, a preliminary list of ten corporations should be made public. Beginning at this time and throughout 1968 and 1969, artists will be contacted by the Museum and asked to submit project proposals. Artists will be approached largely on the basis of the quality of their past work and expressed interest in specific technological processes. Projects to be implemented will be chosen by the Museum on the basis of both potential esthetic stature and practical feasibility. Corporations will be presented with an appropriate work proposal for their approval in principle; scheduling will then be arranged by the corporation, the artist and the Museum. The initial proposal submitted to corporations will be sufficiently clear to indicate the extent and nature of the corporation's involvement. It is understood that this preliminary plan may change considerably during the course of the collaboration between corporate personnel and artist.

Participating artists will sign a contract drawn up by

the Museum setting forth rules and conditions. Non-local artists receive round-trip economy air fare plus \$20 per diem expenses and Honorarium of \$250 per week. Local artists receive the same Honorarium.

Corporations will enter into a written agreement with the Los Angeles County Museum of Art in advance of the scheduled residence periods.

In May, 1968, IBM and American Cement Corporation signed Patron Sponsor contracts and became the first contracted participants in Art and Technology. In October we officially announced the program. Press coverage in the *New York Times* and *Los Angeles Times* occasioned by this announcement were to help us in attracting most of the remaining corporations we required to make the program work. Two months later we listed the companies contracted to date in the first of eleven monthly reports:

PATRON SPONSORS

1. American Cement Corporation
2. Ampex Corporation
3. International Business Machines Corporation
4. Kaiser Steel Corporation
5. Litton Industries
6. Lockheed Aircraft Corporation
7. Teledyne, Inc.
8. The Garrett Corporation
9. Universal City Studios, Inc.
10. Wyle Laboratories

SPONSORS

1. Eldon Industries, Inc.
2. Hall Inc. Surgical Systems
3. Hewlett-Packard
4. Norris Industries Inc.
5. Philco-Ford Corporation
6. The Rand Corporation
7. TRW Systems

CONTRIBUTING SPONSOR

1. Twentieth Century Fox Film Corporation

BENEFACTORS

1. Bank of America
2. North American Rockwell Corporation

Much of our energy now shifted from negotiations with companies to the task of selecting and touring artists. Our discussions with artists were often strangely intense, and there was more opposition on their part to the goals of Art and Technology than we had expected to en-

counter. I had, for example, a particularly emotional conversation with Robert Irwin, who told me that many artists resented certain aspects of the program as they understood it: they felt that it was unfair for the Museum to take possession of the works created; that the Museum was primarily interested in producing an exhibition, rather than in arbitrating the process of interaction as an end in itself; that artists would be pressed by the Museum into making works for these reasons; and that they would not in fact be given access to experimental situations within companies which were not demonstrably related to the materials or processes of their past work. It was not difficult to disabuse Irwin and others of their misconceptions about property rights to the works of art, since the Museum, under the terms of the contracts, had no right whatever to receive works of art; this was made clear both in the corporation agreements and in the contract we were to make with artists.

The issue of our intended exhibition of the works made through Art and Technology was more complicated. My primary motive in attempting to make the resources of industry available to artists was emphatically not to simply mount an exhibition. I thought it would be fascinating to observe a potentially vital reciprocal process, and expected personal and professional gratification from my role as catalyst in establishing the vehicle for such connections. I believed that it was the process of interchange between artist and company that was most significant, rather than whatever tangible results might quickly occur. Obviously the probability that works of art would be created was not to be ignored—I knew that many artists would want nothing more than physically to realize esthetic ideas that may have remained in their minds only because of the technical difficulty of executing them. In short, one could reasonably expect that from twenty artists, each working several months in twenty corporations, some kinds of exhibitible things were likely to emerge. I did not regard the "success" or "failure" of the project as resting mainly with the quantity or even quality of the "results." But I also tried to indicate to Irwin that, given the rationale for such an experiment (which he admitted willingly), and given that we were an *art museum* of the county of Los Angeles, it was only reasonable that the institution would attempt to show something to its audience for its efforts. I did not feel that this would result in undue pressure being placed on the artists to produce certifiable art objects. Interestingly, Irwin himself was to provide perhaps the outstandingly valuable example of a purely interactive situation, issuing in no exhibitible object, although he did seriously contemplate making an environmental work based on his research at the Garrett Corporation's Life Sciences Department. I firmly believed, moreover, that to schedule an exhibition, and thus work toward consign-

ment deadlines, would not only give us an advantageous psychological goal, but would prove helpful in eliciting cooperation from industry. By gearing our efforts toward a culminative event, a quality of excitement and an increased dedication were brought to bear on our labors for this nebulous and prolonged endeavor. Art and Technology was an experiment—and it had to be made coherent and explicit in order to be validated.

The question of selecting artists for participation and deciding which artist should go where was a difficult one, and relates critically to the problem of making possible true “collaboration” as opposed to mere “art-making.” We wanted viable, productive connections to come about, but it was important to us that these reciprocal endeavors be challenging and rewarding to both the artist and the scientist or engineer, by provoking them to reach beyond habituated patterns. However, we did not suppose that artists of character, accustomed to working with a particular vocabulary of forms, would be likely to abandon suddenly the esthetic means developed over a lifetime, merely because they were cast into an unfamiliar situation by taking up residence in a company. It was our intention simply to offer uncommon opportunities for those artists inclined to exercise them. How these opportunities might be used was exclusively the artist’s concern.

Our intention from the outset of Art and Technology was to pay artists for time spent on the project, while they were in corporate residence, and later when installing works at the Museum if their presence was needed. Funds raised from company donations allowed us to remunerate artists at a considerably higher rate than was conventionally allotted by non-profit institutions—international symposia, print workshops, etc. We also attempted to structure a situation whereby most of the works of art made collaboratively would become the property of the artist. To overcome any potential conflict between the property rights of artist and company (the issue arises only with Patron Sponsor, not Sponsor Corporations), we advised artists concerned with ownership of works to plan their work in series, so that they would acquire most of the results. At the same time, companies were informed that they should expect artists to make multiple works if the artists so desired. The decision as to what constituted the “principal work” (the term stated in the contract for Patron Sponsor ownership) resided with us.

We drew up a contract for artists to include these points and to make clear that they were connected to the Museum, rather than the company, in terms of monies and possible obligations. See Appendix II, p. 36.

Most artists signed the contract, but Claes Oldenburg dissented and raised some interesting questions. Olden-

burg had been devoting considerable energy to the study of artists’ contracts with dealers, galleries, printmakers, etc., over the previous year. He is possessed of a forensic acumen that makes attorneys—including his own—envious. He wrote to me on January 27, 1969.

These are my recommendations for a changed contract for the artist involved in the Art and Technology project. I want to emphasize again that the contract is an integral part of the collaboration of art and technology. To ignore contract-making would be to remain with the old separation, where the artist says: I don’t care as long as the thing gets done, a snobbish attitude which I don’t feel fits the present and very American context of artist-industry cooperation. We’re not engaged in creating property for the County Museum, but working out terms which are bound to influence future collaborations of this sort.

1. Travel.

I’ll have to travel out to L.A. several times (see my proposed schedule letter of January 18).

I have already taken my allowed round trip (coach! which I changed to first class, paying difference myself) just to meet with Disney reps. According to Museum further trips will come out of my combined honorarium/diem (letter of January 17).

- ★ I demand that each round trip be paid for, first class, *not* from the hon./diem.
- ★ I also demand transportation be paid for materials I may bring out and their return. Don’t corporations get spec. rates?
- ★ Also that transportation back be guaranteed for works not acquired by the Museum though made during the Museum project.
- ★ Also for the “principal work” in the event it is rejected by the patron sponsor and the museum.

2. In working with the unknown quantity of an industry, the artist engages in a risk esthetically, and he must have safeguards which assure him complete control over the result.

- ★ I demand that the artist should have the option to resign from the project at any time if he is not satisfied with its progress.
- ★ Also that the artist should have the option to reject the “principal work” or any work made that does not meet his standards, and refuse the exhibition of the work by the Museum.
- ★ Problems in installation of the piece may arise and the installation of work by the Museum, if the Museum exhibits it should be subject to the artists approval. Also, if installation help is needed, the Museum should pay the artist’s trip to LA to help plus expenses.

3. Paragraph 8 has been amended so that the artist retains ownership of work made during the project not "integral" to the "principal work." "Integral" should be defined as part of the work, or essential to it. Not for example preparatory sketches or models.

★ Also, the artist does not sign over his copyright of any work made during the project including the "principal work."

4. The artist takes a risk in exposing himself and his work to commercial exploitation promised in the prospectus to industry: "... promotional benefits can be considerable." Not however to the artist.

★ Therefore, publicity by the Museum or industry must be subject to the artist's approval and/or guaranteed not to violate his best interests. An example of this occurs in the Times article where a spokesman for the industry (Disney) states his expectations of what will occur: "I think show-biz is a good thing for an artist to learn. It helps him to clarify his ideas..." Granted, this info was obtained by the Times reporter, not from a release, but seems to me ominous.

5. A reading of the prospectus to industry will indicate how much the burden of sacrifice is on the artist, not on the other collaborators. Industry gets a tax deduction for help and materials provided, and presumably also for their donation of \$7,000 to the project and their donation of the "principal work" to the Museum. That they will donate the work is tacitly supposed, though they are also promised the benefit of receiving art works (plural) which "will exceed in value the total expense of the corporation's contribution."

The other "collaborator"—the Museum, receives free a work of the artist it might otherwise have had to buy, depriving the artist and his agent of a sale. This gift comes with no strings attached and the right to resell—without any percentage to the artist—to *anyone*, after five years, the right to exhibit or not, etc., all the benefits had they bought a piece.

The artist receives no tax breaks, and is to work at a reduced rate for three months, supporting himself in a foreign place at an impossible per diem rate, and in addition, expected to pay his own transportation etc. Say he will work at approximately one fifth his normal rate. This is not a "collaboration" and is not set up to encourage the artist to do his best, rather to get it over with as quickly as possible, if he was unfortunate enough to sign the contract.

★ Therefore, I demand an increased "honorarium" of \$6,000, which may be paid on an installment basis

out of which no other expenses are to be lifted, such as plane tickets.

★ A realistic per-diem expense of \$40, considering hotel rooms, eating out, need of a car to get to Glendale. This to be paid any time the artist is in LA working on the project including installation time in 1970.

One should consider that the artist may be thinking about the project in his home base before, during or after his execution of it in LA—this is time not mentioned in the contract. Also that no studio facilities or housing arrangements are guaranteed or provided, and that a certain amount of time will be used up in just getting settled.

★ If it is at all possible to arrange, the artist should participate in any tax benefits of the gift to the Museum of his work. He should definitely receive a percentage in the event the work is sold by the Museum, especially if it is to a private party.

I replied to Claes on February 11, 1969,

Let me address myself to your comments point by point. The four starred points you make in "1" cannot be accommodated for any artist under the present budget of the project. Changes of this nature would have to hold, of course, for all of the artists, and if these changes were made, the complications and added—unpredictable—expenses would obviate the project entirely. Considering that all the expenditures made by the Museum, including preparations of different kinds and fund-raising, are for the purpose of a single exhibition, and not for acquisition of works of art, I think that the provisions for artists are fair.

In regard to "2": The artist has implicitly the "option to resign" in his contract, and to "reject the 'principal work' or any work made that does not meet his standards, and refuse the exhibition of the work by the Museum." If you would like these points stated more explicitly in your contract, we can do this. So far as installation is concerned, I know you understand that in *any* exhibition of a number of artists' works, every artist could not and has never had the right to place his work where he wants it regardless of other works. However, in some cases, specific works may be designed with a particular installation area in mind, and thus the artist would of course have that location reserved for his work. If you wish to select a site in advance of the completion of your project, we shall do our best to accommodate you. We would naturally solicit the advice of artists as to placement of the works in any event, and if help is needed, of course the Museum should pay the artist's trip to Los Angeles for this purpose plus expenses.

Re "3": "Integral" clearly does not refer to preparatory sketches or models; and there can similarly be no doubt that the artist "does not sign over his copyright . . ."

Re "4": Beyond the safeguards taken by the Museum on the artists' behalf, it would be impossible to guarantee that some independent journal will not negatively criticize an artist's work or in any number of ways "violate the artist's best interests." I know you realize this and I doubt that you would want it otherwise. So far as comments by corporation personnel go, which is what you have in mind, the Museum, while it cannot require that every company man clear an answer to a press question with us, has emphasized and will continue to request of corporations that every reasonable effort be made to clear public statements with the Museum.

Re "5": It's not clear to me what you mean by corporations "are also promised the benefit of receiving art works (plural) . . ." since a Patron Sponsor has only the option to receive a single work. Other works automatically belong to the artist; moreover, all works executed by Sponsor Corporations (as opposed to Patron Sponsors) go to the artist. Almost half of the corporations involved do not stand to receive any work of art. Furthermore, it is quite possible that none of the Patron Sponsors will offer a work to us. This should indicate that we have not structured the project to gain "free" art works for the Museum. Your point about the Museum's right to resell a work should it be offered as a gift to us can be changed to suit you, since it is most definitely not our intention to sell any major works from the collection. If you like, you may stipulate that any gift of your work made to the Museum may not be sold in your lifetime.

The honorarium figure was the maximum sum the Museum could budget and it will not be possible to change it at this time for any, and therefore all, of the artists. I very much agree that a \$40 per diem expense is more realistic than the present expense, but our figure is based on County of Los Angeles regulations. This has always been a serious problem for Curators and to date an insoluble one. I can only offer to alleviate your expenses by covering them as much as possible while you are here, and by arranging to pay you for a special event or two which could make up the monetary difference between your desires and what is called for in the contract. I do not think that time spent in planning the project can be estimated or budgeted. I do think that any possible tax benefits accruable to artists should be encouraged, but I cannot yet conceive of how this might be effected.

Despite a certain suspiciousness of the project on the part of some artists (exclusively American artists, incidentally, and particularly Los Angeles ones), only three artists, out of the total of sixty-four we approached, were categorically opposed to association with the Art and Technology program from the outset. They are all extraordinary artists, and I was at considerable pains to make certain that they did not misunderstand the premises of Art and Technology. Frank Stella simply couldn't abide even the idea of working in an industrial plant. Jasper Johns felt similarly; he patiently explained to me that the content of his art is about the move of a hand from one point in space to another nearby, and that to him the possibility of moving in a *social* situation to make art was unthinkable. Ed Kienholz, on the other hand, though not opposed to the idea in principle, could not imagine what industry could do for him that he couldn't do for himself.

Every other artist we approached was in theory willing to pursue the collaborative opportunity at least to the extent of touring corporations. Personalities as diverse as Jean Dubuffet and James Byars, Jules Olitski and George Brecht, Roy Lichtenstein and Jackson MacLow, were interested in exploring the notion of coming to California to work in a corporate setting. I had expected resistance from artists, aside from the reluctances discussed above, on "moral" grounds—opposition, that is, to collaborating in any way with the temples of Capitalism, or, more particularly, with militarily involved industry. This issue never became consequential in terms of our program, perhaps because the politically conscious artist saw himself, to speak metaphorically, as a Trotsky writing for the Hearst Empire. However, I suspect that if Art and Technology were beginning now instead of in 1967, in a climate of increased polarization and organized determination to protest against the policies supported by so many American business interests and so violently opposed by much of the art community, many of the same artists would not have participated.

As we set about contacting artists we had certain definite guidelines. First of all we were determined to involve artists of quality, regardless of their style of work, and we were not especially seeking artists whose approach was "technologically oriented." If anything, we may have been prejudiced against those artists who had been deliberately employing the tools of new technology for its own sake, because so many recent exhibitions centered on this notion had been of little interest artistically. We were also determined to discuss Art and Technology with as wide a range of artists as possible—Europeans and Americans, Japanese and South Americans; artists of great repute along with unrecognized figures; artists in their sixties and artists in their twenties. We felt that only by exposing diverse types of artists to corporations could the value of the premises of

Art and Technology be tested. Therefore we tried to approach not only painters and sculptors but poets and musicians (thus involving Karlheinz Stockhausen and Jackson MacLow). We tried to prepare for unanticipated requests from artists, and fortunately the structure of Art and Technology permitted us a degree of flexibility when necessary. For example, certain artists we approached wished to collaborate with a fellow artist (Irwin and James Turrell, Stockhausen and Otto Piene, Robert Morris and Craig Kauffman) at a particular company; or an artist might extend his period of residence over a year, or even two, by leaving and returning to the plant several times (as did Lichtenstein, Rauschenberg, Richard Serra and Jesse Reichek).

Over a period of more than two years, from late 1967 to 1970, while we were contacting artists, we also received seventy-eight unsolicited proposals from artists who had read or heard about Art and Technology. All of these proposals were studied carefully and many were reconsidered several times with various companies in mind. None, in the end, were accepted. These projects involved, most often, the areas of transduction; of plastics used in a variety of ways; of computers; and of lasers and holography. Many artists wanted to make total, elaborate and integrated environmental situations. Generally, the unsolicited proposals were made by relatively unknown artists. There was a rather high percentage of proposals received from pairs or groups of artists wishing to work together. There was also a high proportion of women artists. Few engineers or scientists approached us. There were one or two cases of eccentric, "primitive" or folk-traditional artists who wished to make mad machines through Art and Technology. We were usually reluctant to follow through on proposals which seemed too completely designed, or thought out in advance, so that the corporation's role would simply be a question of executing a previously conceived plan, rather than collaborating actively in both the conception and execution of an idea. The most interesting proposals are described in the artists' section, part 3.

Our method of approaching artists did not substantially vary from the outset of the program. Each artist was visited, or came to the Museum, and was shown material on one or more (usually four) corporations that we thought might be of personal interest. Each artist was invited to tour corporations before deciding on the nature of work he might wish to do.

These tours were usually conducted by a corporation public relations man, often a former engineer, who would introduce the artist to department heads in each division. Often a conference of these departmental chiefs, along with other executives, would be held to answer the artist's questions. Sometimes a film on the company's total operations was shown—this was often

helpful. Cal Tech physicist Dr. Richard Feynman, who served as Consultant to Art and Technology, might attend, and one of us—Jane Livingston, Gail Scott, James Monte, Hal Glicksman or myself—was always there. It was quickly apparent that the presence of a congenial company representative was a critical factor. With an alert, sympathetic engineer, the tour was likely to be lively and stimulating. Without such a person to lead us into interesting areas of discourse, the facility itself would have to be intrinsically compelling, with an obvious potential art medium, for the tour to succeed. Generally one or the other of these conditions prevailed. If they did not, the tour could be a lugubrious and wearying exercise.

In originally considering appropriate artist-corporation matches, certain apt connections came to mind readily and with forcefulness: Dubuffet at American Cement Corporation, Vasarely at IBM, Oldenburg in Disneyland, Lichtenstein at Universal Film Studios, Andy Warhol at Hewlett-Packard (for holography). These five combinations seemed natural but not too pat. We expected other matches to come about less on the basis of our suggestion than through the process of exposing artists to various companies. Many of the observations made in regard to these few artists apply as well to other collaborations; I cite them as key examples of the kinds of issues and problems confronted throughout the program.

Each of these artist's work suggested to us a process which was then available in a contracted company. For several years Dubuffet had been working with cement, making sculptures and bas-reliefs on a limited scale. Vasarely's plotted paintings called to mind a computer company like IBM. Oldenburg's proposals for monuments and his anthropomorphising of objects and animals made the facilities at Disney seem almost necessary. Roy Lichtenstein had started making his first sculptures, and Universal's exceptional capacities for non-load bearing construction (with staff, a material made of plaster and fibre) seemed of likely interest. (In fact, the artist ignored this possibility and went directly to work with film.) Warhol's work suggested to me a latent relationship to holograms.

We approached each of these artists primarily with the companies noted in mind, and each was responsive. Most of these artists became deeply involved with Art and Technology and eventually made unusual works of art as a consequence of their connections to companies, although not always with the particular company with which they were first associated. Lichtenstein stayed with Universal, but Oldenburg and Warhol were to work with different companies and techniques than those visualized originally. The other two artists also became involved in the program but did not develop work to a point of resolution. The experiences of both Dubuffet

and Vasarely were similar. Each is European and over sixty. They responded to my presentation of Art and Technology with a carefully planned proposal for a monumental work. Their plans called for fabulous expenditures, straining even the grandiloquent capacity of American industry; but there was a distinct reluctance on these artists' part to engage with engineers and administrators in a true give-and-take manner. The concept of personal dialogue—critical to the nature of Art and Technology—was not at all intriguing to these artists.

In contrast to the Europeans, most American artists chose—often from a bewildering array of possible techniques—a relatively simple process, approaching the problems implicit in it with single-minded tenacity. This was clearly observable early in Art and Technology in the experiences of Lichtenstein, Oldenburg and Warhol. American artists tended to focus on a single technical principle or device. To do this properly, it was found, was no easy matter. Lichtenstein's project at Universal seemed "primitive" to their sophisticated technicians, at least until the real nature of his desire became apparent, for Lichtenstein wanted a pictorial *quality* many times more precise than is needed by Universal for their own purposes. Andy Warhol finally opted to *reveal* an integrally imperfect mechanical system, rather than make a virtuoso display by any conventional definition. Oldenburg was exclusively concerned with making mechanized versions of monumental sculptures: "make mechanics obviously stated," he wrote to himself at one point. Such a frank, or even ironical, attitude toward the machine has long been characteristic of many American artists (Sheeler, Schamberg, Rube Goldberg), albeit with a certain romantic or comic nuance.

Aside from these artist-company connections, which got the program underway, we generally went to artists with less specific notions than these in mind. Few artists we approached (Donald Judd may be the sole exception) expressed interest in reducing possible action with a company to *in absentia* fabrication. An artist might indicate to us his interest in a specific process, as, for example, Robert Morris who referred to heating and cooling devices, leading us to research our companies for this capacity. More often an artist would have no notion at all about what a corporation might have to offer, but almost all wanted to have a look at them. After touring several companies most artists formulated a more or less specific plan of attack, either a proposal for an art work or a request to explore a particular facility in depth. There were actually only four exceptions to this, that is, artists who toured companies but saw nothing to inspire an idea or a desire to work within them. These four artists were Philip King, who flew from London to visit Kaiser Steel, Wyle Laboratories and American Cement, James Rosenquist, who toured Container Corporation of America, Ampex and RCA; Peter Voulkos, who went to

Norris Industries and John McCracken who visited Norris Industries, Litton Industries and Philco-Ford Corporation.

Most of those artists who became acquainted with corporation facilities wanted to take up residence at a particular firm. Over fifty artists *wished* to collaborate; twenty-three of those actually did, spending varying periods of time at a company or companies. (This was roughly the percentage of successful matches we had anticipated achieving when we drew up the budget a year earlier.) We can now conclude that two factors largely determined whether or not a collaboration would result from our preliminary efforts. The first consideration had to do simply with the artist's personality, most particularly his ability to communicate with diverse kinds of people. This was of course a subtle factor, not quantitatively definable, but observable nevertheless. Les Levine's somewhat casual, free-wheeling manner, for example, did not ingratiate him to the people at Ampex; Iain Baxter's seeming frivolity was worrisome to Garrett; Len Lye's definiteness about his demands and impatience with apparent technical limitations did not inspire the Kaiser personnel. But of course each company responded differently: IBM personnel were perhaps offended by Jackson MacLow's unconventional appearance and dress, and possibly by his politics, but another computer company (Information International) found him entirely acceptable. Much depended on whom the artist might meet at the start, while touring a company: Robert Whitman met optics engineer John Forkner at Philco-Ford, and the two personalities were immediately sympathetic, despite a general doubt on the part of the company itself, while Robert Morris could never find a true line of communication with anyone at Lear Siegler, Inc.

Often contracted corporations would hesitate to take an artist into residence when, for technical reasons, they anticipated having to sub-contract a major part of the project. They wished to utilize indigenous techniques and materials. This was the second key factor determining the ease or difficulty of setting up collaborations, and was basically more important than the issue of personalities. This problem occurred frequently, but it could not have been avoided. The central premise of Art and Technology rested on a one artist-one company nexus. Early in the program, the need for a number of back-up companies to provide raw materials was anticipated, and in fact we sought commitments from firms such as Rohm and Haas, for plastics. But it was quickly apparent that companies required singular identification with an artist in order to produce and perform significantly. Companies would not give impersonally, so to speak, any more readily than patrons of museums make donations anonymously. To alleviate this problem we invented the category of Benefactor Corporation: we

solicited \$7,000 donations from banks and other non-participatory firms to be allotted largely for the acquisition of materials or specialized services not made available by a sponsoring corporation. However, we persuaded only three companies to enter Art and Technology in this category.

The factor of anticipated sub-contracting implicit in an artist's proposal was primarily instrumental in the failure of Michael Asher, Hans Haacke, Max Bill, Stephan Von Huene, Takis, Otto Piene, Karlheinz Stockhausen, Eduardo Paolozzi and others to make corporation connections. Some corporations also rejected project proposals for reasons of excessive in-house expense, of course, but this happened less often: IBM studied Vasarely's plan for weeks and concluded that it might cost up to two million dollars to build, and then would only have a life of four years (due to the narrowing life expectancy of successive computer generations); Litton declined Vjenceslav Richter's plan, claiming it would cost over a million dollars; RCA similarly declined to work on Glenn McKay's project, the cost of which was anticipated at \$500,000.

Most of the vital collaborative work done under Art and Technology took place during 1969 and early 1970. Within this period of time, some artists toured the company, returned home, formulated a detailed proposal, entered into residence at a corporation for about three months, executed as much work as time allowed, and left. This was basically the experience, for instance, of R. B. Kitaj, Oyvind Fahlstrom and Jean Dupuy. These were the comparatively simple exchanges to consummate, partly because the corporations with whom these artists collaborated, or specific divisions within them, are primarily industrial (Lockheed, Heath, Cummins) and partly because of the orderly and sequential manner of working characteristic of these particular artists.

Few cases were so simple. Most artists, as has been stated, extended their residence at a company over a year-long period, leaving and returning several times. This rhythm allowed for generally advantageous results. We observed a definite strengthening and maturing of concepts in the work of Robert Rauschenberg, Rockne Krebs and Tony Smith, for example. Rauschenberg first visited Teledyne in September, 1968, beginning an unusually long series of visits to the company, entailing discussions, the gathering of particular data, acquisition of materials from all over the U.S., testing, etc.: it was not until October, 1970, that a final period of residence occurred, and work accelerated; the project is to be realized in February, 1971. Krebs' and Smith's experiences with companies were also protracted and concomitantly enriching. However, there were dangerous moments in these prolonged collaborations, for the absence of the artist from a company tended to reduce

corporate availability. It was at such times that the Museum's active role was necessary to keep the connection viable.

Since Rauschenberg, Krebs and Tony Smith each worked with the company they had originally selected, there was a certain coherence in these collaborations in spite of the unusually lengthy period of time involved. With virtually all of the others, however, substantial involvement on our part was mandatory to keep the "marriage" together. Often artists had to leave one company for another. After contracting with us, John Chamberlain developed an ambitious scheme for a work involving diverse odors at a division of Dart Industries' Riker Laboratories. The president of the company rejected the plan. After other trials, Chamberlain became the Rand Corporation's artist-in-residence (following upon Larry Bell's stint there). Wesley Duke Lee came from Brazil to work at Hall Surgical Systems. After two months the company declined further participation, prompting thereby the Odyssey of Wesley Duke Lee through Southern California: the artist worked at over a dozen small sub-contracting firms to develop his project, which had been defined at Hall, racking up fourteen thousand driving miles, in a project that was to last eight months. It is still not completed.

Outstanding case of a project taxing the limits of our abilities was that of Robert Whitman at Philco-Ford. Whitman is probably the most experienced "collaborator-artist" in the U.S., and, as I noted above, he had the fortune of locating a brilliant and engaging optics engineer, John Forkner. With the implicit support of the company, a Patron Sponsor, plans for a radical work—technically innovative and esthetically compelling—were drawn up, only to have the company administration flatly refuse *any* funds for construction. The realization of this work required far-flung resources: the artist redesigned his work; the engineer came up with entirely altered plans for construction; a display-fabricating firm was hired to create certain parts; the Laguna Beach Unitarian Church Fellowship pressed one hundred citizens into voluntary service; and finally the United States Information Agency provided scores of laborers (when the work was first shown at Expo 70) for the final stages of construction. Similar nightmarish complications threatened to inhibit the construction of works Oldenburg researched and defined at Disney Productions, but in this case we induced Gemini G.E.L. to take over the production of one of Oldenburg's several models, and they did so with unusual efficiency and dispatch.

Given such obstacles as these, twenty artists nevertheless are expected to bring projects to a state of culmination. In virtually every case there was a particular corporation individual who made himself responsible, along with the artist, for the success of the collaboration. Such a man might be primarily an authoritative officer, who delegated responsibility, such as R. H. Robillard at Lockheed, or a genuine technical collaborator, such as Forkner at Philco-Ford. In many cases, when a company did give generously of its resources, we came to find hidden, if not unusual, motives for its doing so. Jet Propulsion Laboratory's involvement with Newton Harrison is probably accountable, in part, to the company's desire to move out of space exploration exclusively and identify itself with the larger area of environmental research. Some corporations apparently became involved with us in order to promote a particular product or process (Cowles' Xography) or an area that the company wished to make better known (Garrett's Life Sciences Department). General Electric was eager to modernize their image. Two major companies—involved, not coincidentally, with consumer-type products—contracted with us because of their presidents' social connections with Mrs. Chandler. Three companies—the smallest ones—joined with us solely for the publicity. Some companies were exceptionally cooperative because of a tradition of cultural support dating back for years (Container Corporation of America, IBM, Cummins), but other companies, whose presidents are art collectors, proved difficult to work with, precisely because that knowledge of art created a restrictive bias.

In April, 1969, after reading a second article on Art and Technology by Grace Glueck in the *New York Times*, Phyllis Montgomery of Davis, Brody, Chermayeff, Geismar, DeHarak, Associates—the Exhibition Design Team for the United States Pavilion at Expo 70—called me to discuss the possibility of my organizing an exhibition including works made under Art and Technology for the Pavilion. Accordingly, we entered into extensive negotiations with the USIA's Commissioner General (later Ambassador) Howard Chernoff and Deputy Commissioner General Jack Masey, and the Exhibition Design Team. In a formal contract, signed on May 30, 1969, we consented to postpone the Museum show for one year, and draw from it a smaller preview exhibition for Expo.

The commitment to deliver in time for Expo 70 was a distinct gamble. Our original deadline was tightened, since we had planned to exhibit results of the collaborations in April, 1970, at the Museum, whereas all works for Expo had to be installed—in Japan—by March 15, 1970. Also, certain inherent conditions restricted the range of potential works for Expo: only American artists could be selected; and a traffic flow of up to 10,000 persons per hour was expected throughout the seven-day

week, six-month long run at the Fair. (This astonishing estimate proved to be correct: 10,800,000 visitors poured through the Art and Technology Exhibition in the U.S. Pavilion before Expo closed in mid-September.)

I felt that the risk was worth taking. A fundamental belief in the necessity of giving artists access to industry lay at the heart of Art and Technology, and Expo 70 seemed to me a perfect occasion for demonstrating the validity of this concern, to an international as well as an American audience. We had six months' time in which to deliver eight "rooms" of art, for that was basically the way the art-exhibition space was designed in the Pavilion. Inevitably those six months were crisis-fraught. The complexity of the logistics involved may be indicated by the fact that when these eight remarkable works were shipped to Osaka, they comprised 15,000 separate components, occupying eighty crates and weighing forty tons. Installation in Japan took ten weeks and involved my continual presence, extended visits by five of the participating artists, several U.S. engineers, a team of designers and architects and hundreds of workmen.

The only "object" in the Expo exhibition was the first work encountered outside the main entrance door of the New Arts Section: Claes Oldenburg's *Giant Icebag*, which was in complex motion for nineteen minutes and forty-five seconds and rested for fifteen seconds. This was the only work that actually existed before the Expo installation: it was tested, and performed perfectly, in Los Angeles in January, 1970. Each of the other seven works arrived in Japan in the form of disconnected system components, which were never entirely combined and put into operation until their mounting at the Expo site. The fact that none of us could accurately visualize the Expo show beforehand—even the artists did not know precisely what their works would do in the unforeseen conditions—caused a certain amount of understandable anxiety, as well as excitement. Inside the exhibition space the viewer first found himself in Boyd Mefferd's room. One hundred twenty wall-mounted strobe units flashed in program, causing intense, apparently hallucinatory retinal images (provided the viewer took at least fifteen seconds to allow this to happen: very few did). One next entered Tony Smith's cave, made entirely of corrugated cardboard, and illuminated from above by shafts of light. Thousands of octahedra and tetrahedra, shipped to Japan in scored flat sheets, were individually assembled on site and mounted architecturally according to a complicated twelve foot model the artist had made. After the viewer traversed ninety feet through the Smith tunnel, he came up against Robert Whitman's optical tour de force: a twenty-three foot semi-circular space containing various illusionistic phenomena. Placed against the semi-circular wall from floor to eye-level were one thousand corner-shaped mirrors which reflected to each viewer, regardless of where he stood or

walked, *only* his own image, repeated a thousand times. Mounted above eye-level were five pairs of five by seven foot pulsating mylar mirrors, in front of which hovered ten eerily bright three-dimensional objects (a pear, drill, goldfish bowl with live fish, a knife, a clock, ferns, etc.). From Whitman's room one stepped into Newton Harrison's forest of five thirteen-foot high plexiglass columns, each filled with glowing gas plasmas, programmed to create varying color-shapes of pure light. In Harrison's room, as in Whitman's area, the viewer was in the dark, seeing mysterious *shapes* being formed out of light. So too in Krebs' laser room, entered from Harrison's, one perceived light patterns in a dark environment: the piece formed a complex web of red and blue-green pencil-thin beams, crossed, interlaced and in one place extended (through two enormous parallel mirrors) "into infinity." The sense of immateriality in Krebs' sculpture was strengthened by the fluctuation of the light patterns. Into a large alcove at the far end of Krebs' room were placed two 35mm rear projectors for Roy Lichtenstein's two movie screens. Each screen measured seven by eleven feet; the projected film image on each screen was a "moving picture." One image combined film footage of ocean and sky; the other screen depicted ocean surface and a dot pattern above; both screens were split with a horizon-like black line, and the images rocked. From this paradoxically anti-filmic evocation of "nature" one turned to Andy Warhol's work, which also dealt with man's transformation of nature into artifice: it was a giant field of three-dimensional printed flowers, seen through sparkling transparent curtains of water, falling like rain.

Even with the wide diversity of artistic styles presented in the Expo exhibition, certain singular characteristics were shared by the eight artists. In fact, many of these qualities now seem to apply to most of the other artists in the Art and Technology program, such as Robert Rauschenberg and Jesse Reichek. Primary among these is an emphasis on transient images and evanescent phenomena. At Expo, there was no object which sat in a traditional relationship to a ground. Flicker and vibration were omnipresent—but not in the pretentious manner endemic to much mechanical art. Distinct and tangible images presented themselves but they would become transformed or disappear. Much depended on one's particular vantage point—your neighbor was never seeing what you were seeing at the same time. This was true even though certain of the works, which had potential for individual participation, were forced to relinquish this aspect because of the enormous crowds at Expo. There was a notable absence of visible housing for each work, allowing a purity and directness of confrontation with technique rather than mechanics. But no works were designed to parade technique; almost every artist in the program displayed a certain reserve before the tools of technology. As the artists de-emphasized the look of

the machine, they were able to maximize a sense of penetrating psychological immediacy. One did not feel a palpable sense of virtuosity in these works, but rather a character of restraint and esthetic sureness.

After Expo opened, I reported to the Museum's Board of Trustees on our experience with Art and Technology in Japan, and we turned to the consideration of the Museum's exhibition. Our budget, estimated in 1968, had been proving close to the mark. We had raised over \$40,000 more than expected from corporations and had therefore been able to place several more artists in residence than anticipated.

Based on what we learned from the Expo experience, a further, and even an unprecedented commitment is now required by the Museum to mount the new exhibition. Virtually all the works produced through Art and Technology are conglomerates of component parts, dependent for their very existence on elaborately constructed formal matrices. The works shown at Expo will, with the exception of Oldenburg's *Icebag*, be fundamentally reworked due to the much greater design flexibility of the Museum space. Moreover about twelve additional artists' projects are expected to be resolved for the Los Angeles show.

The accounts of interaction among seventy-six artists, over 225 corporation employees, and Museum staff members comprise part 3 of this Report. Both the emotional complexities and the sheer logistical difficulties implicit in this five-year engagement emerge cumulatively through these accounts.

October 30, 1970