Abstract

A collection of reflections and observations on the structures and mechanisms that underlie research and production in the ever-changing field of Computer Music.

0.1 Recent Changes

There is no need to demonstrate that the size and quality of the Computer Music community has changed drastically in recent years. The multiplication of meetings all over the world and of publications dedicated to the topic, the exponentially increasing attention given to the computer as a musical instrument by composers of all ages and backgrounds, the extreme diversification of compositional attitudes can be experienced directly at any Computer Music Conference today. The main reason for this change resides in the fact that Computer Music digital signal processing technologies are now out of the so-called "edge technology" experimental stage and have already entered the industrial-consumer application stage. This entails a great drop in the cost of components and finished products dedicated to sound synthesis and music production along with, of course, a consequent widening of the community itself.

0.2 Implications of a New Set-Up

The Computer Music community is no longer that small tribe of freaks that hung around huge computers, but rather an extended group with different - even opposed - interests (from puppets to the above-mentioned freaks). From free improvisation specialists to acoustic practitioners to integral integrators). This new situation requires some analysis of and consequent changes in the structures that up to now have served Computer Music composers, musicologists, researchers and the like. Changes are obviously taking place everywhere, both in large and small institutions, but we feel that these changes are usually produced by specific interests and contingent situations, that is, without much consideration for more general aspects. We believe that new music today cannot grow out of specific, provincial interests but rather out of the enlarged and varied body of experiences in the community as a whole. According to this belief, not all changes are equally valid. We will try to clarify our point of view in this paper analyzing only some of the aspects that we feel are the most important (sorry, no space "they" said...). For the new space reason the statements expressed here are not documented in scholarly fashion. Of course, we are willing to discuss these further and with appropriate documentation upon request.

1 Three Major Aspects

1.1 Access to Music Production Means

1.1.1 The Need for Selection. Up until a few years ago, digital music instruments were not mass produced because of the advanced technology they required. Commercial digital music instruments were very expensive and quite limited in scope, while powerful off-the-shelf synthesis programs running on large computers and real time ultra-fast microprogrammable DSP's could be found only in the major Computer Music centers which could afford them. This meant, basically, that: a) availability of such time was limited and music had to share it with research (in the best of cases); b) even considering a small community, supply was much smaller than demand, forcing centers to severe selections concerning the realization of compositions; c) these selections turned out to be real discriminations due to the enduring non-existence of common musical language grounds (who wants them, anyway). If they were looking for genuises and musical masterpieces, they should have known better, geniuses, talents and masterpieces all speak through strong, well-defined languages. In this context, the problem of how to extend which composers may have access to non-commercial machinery is not only difficult, but absolutely out of the question.

1.1.2 North-American vs. European Institutions

We next make a distinction which concerns the situation in North-American institutions as opposed...
to European norms. It is fair to admit that North- American centers are found mostly inside large private academic institutions and their financial assets depend directly on the institution they belong to, sometimes aided by outside founda- tions. Academic affluence determines at least part of the necessary selection. European centers, instead, depend largely on government funds. They are, in fact and theory, a service paid for and provided to the citizens. The idea of "filing" North-American institutions was to clearly not applicable in the European context. Obviously quotes must be made, leaving only one partial solution, that is to produce personal workstations sufficiently powerful and within economic reach of all composers. Up until a recent past, the trend has been to opposite. To design as easily advanced and expensive machines available to a few. The limitations for this trend result from a fashionable quest for technological progress to a question of imperative for real-time instruments (cf. Borkowsky, 1983) but the most important reason was never made explicit, that is in the need to centralize resources in order to (increase personal power which could not be had by transnational activity alone. And because the problem of studio-access has been consistently past point, it has often given rise to absurd formal arrangements. Today, everyone is talking about workstations because these problems have become too evident, but only a few intend to design serious machines which could allow composers to preserve their autonomy.

1.1.3 Selection Techniques. For those who have not tried as of yet to produce pieces in large centers, we will throw in a metaphor that will clarify the basic method described. It works like the banking system in this: you cannot have a bank account no matter how much money you are willing to put in it if you don’t have one. You can get around the problem if you know someone who has one, and in his bank account you are willing to use the directors and basically you are very cool; but you always need a bank account to open a bank account. And there are written rules about it. It’s essentially the same in large computer Music production centers: you have to be "known" in the instrumental academic world in order to produce a piece, otherwise you are not given the means to produce that for which you are to be "known". In fact, musically speaking with the large centers mainly supply in prestige rather than means of production.

1.2 Isolivity/Computer Music Center Relationships Many will say that the problem we have analyzed in the last paragraph has already been solved by recent efforts to improve the interface between the composer and industry of digital music instruments and computer Music centers. Let’s analyze then, has fruitful use Of collaboration really is, and who benefits from it.

1.2.1 Who is changing what? It is actually true that more powerful and very expensive digital syn- thesizers of all sorts are being for sale at a greatly lower prices than what are practically available. As we have already said, the introduction of VSL technology for digital signal processing led to mass production of low-cost fast- access memory they bring already in digital music music out of the experimental laboratory into the realm of mass production. The allegedly experimental/pro- fessional/consumer-domestic pattern is typical of most technological applications in consumer society. digital music instruments networking. Non-commercial Computer Music, on the other hand, continues to be an experimental art, and one that we must honestly admit barely survives the clearing of the masons. In the ensuing state of affairs digital music instruments, once available only to few "known" composers, are now made for mass production music. Though these rather rigid instruments do not meet the requirements of experimenting composers, their overwhelming availability has attracted many composers to them. Their very rigidity, however, casts many doubts on which is using who, but this is not all.

1.2.2 fruitful collaboration? The problem is that ideas, fundamental concepts and years of experimentation are being sold cheaply to the industry by the composers. We certainly do not wish to interfere with the internal policies of each center, however care should be taken that in the exchange, valuable products and information for the community or even for the centers themselves are provided. In other words, for peoples’ we give away our cultural and technological patrimony and what we get in return are pop instruments to which we have no say, whereas in order to adapt them to our needs in the end, we must adapt to them. And since the course of com- petitive VSL production is beyond the reach of even the largest composer center, we cannot be cheated. We have microprogramming access only when the chip we are working on is completely out- performed by the leading state of the art node (which remains covert, of course), and that is because the industry needs everyone to produce large amounts of customized software (cf. Lauxhour, 1982). If we wish to deal with serious real-time musical requirements let us admit now that the avenues presently traveler microprogramming are very few, or be the last and whatever cannot is everything working on any more and whatever we really need is real access to these chips and the like.

1.3 Technological Research and Musical Research in Computer Music centers There is a great deal of effort in research in Computer Music centers. The balance between technological research and musical research in Computer Music centers has
always stimulates a great deal of debate.

1.1 What is musical research? Few (if any) words have been spent to consider if the fruits of so-called musical research can effectively be utilized by composers in a near future. What good are the latest "expert conceptual tools", the ultimate "interactive composition modeling" or the well-defined "intelligent space" if, in fact, composers do not have the means to use these research results? We're not saying that this kind of musical research is useless: on the contrary, it is extremely valuable to all of us, but it should have been preceded by other research of an extremely musical kind: the realization of versatile and completely autonomous concertations in current off-the-shelf technology. Such research will perhaps produce some classic non-real-time direct synthesis machine, but beyond that nothing new technologically speaking, but such research is fundamentally musical since it would lead to a machine with which we could make music as we please, whenever we please, and where we please (provided electricity is available), and, moreover, one that would cost just as much and perform just as well as any other professional music instrument. But considering the vast amount of knowledge needed to create such a project, it would seem that large centers would be the most suitable places in which to pursue this. As of August 1986, no machine like the one described exists, not even a prototype (evidence to the contrary is more than negligible). Among the workshops the various centers are presently designing, least serious ones are, basically, MIDI machines (and you can find much cheaper ones in the marketplace) and others require connection to the center at least for conversion if not for some last program changes and/or memory storage.

2 CONCLUSIONS

There are many other topics along similar lines that are worth discussion. Conference organization, musical analysis of technological changes, the so-called "musical" standards (there are a "standard music" that could apply to it, real standardization needs, and so on. All these require a kind of space that we are not given access to here. We are of course available to discuss all of them, much in the vein as the three presented in this paper.

2.1 A proposal

2.1.1 The Caglioni Centenarian Project. As a constructive conclusion, we would like to introduce a project that is going to take place at the Conservatory of Caglioni, Gardena, in the near future. A non-real time, direct synthesis completely independent workstation is going to be designed and "set up" on IBM-compatible machines in the Electronic Arts Lab of the Conservatory. The system will have its own A/D/A conversion (one channel in, two out).

MDI (surface and sequential memory storage on computer-controlled videotape with an internal hard disk for buffering). The software will be structured as an inner kernel in MIDI-capable language format and several (interchangeable) outer shells for interfacing (digital editing, MDI-generating, fixed point/floating point formats, etc.). Special attention will be given to all existing standard formats and to a possible standardization with systems in other Italian Conservatories.

2.1.2 Main Features. The importance of this project is that we plan to test the total cost of the complete system in the $10,000 range, and documentation and program sources will be available to anyone at cost prices. Such a project is still at an early stage and we are aware of the vulnerability of such ambitious schemes. We are announcing it only because we need the collaboration of all men and women of good will. We don't think that this is our sole mission in life, but we've been waiting for the "big guys" long enough: they would have certainly done it better, but they were not.

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BIBLIOGRAPHY