

A SUMMARY

Historically, I should like to summarize the growth of our business and technical thinking; present some of the basic problems of our task; give a summary on the general attitudes and operational approaches; and project some of the future possibilities our technological advance opens up to us.

It all started with a crude idea, a burning enthusiasm, a capable, paternal patent attorney, and an array of technologically oriented young men. The basic, economic structure was masterminded by Mr. Benz who's desire it was to surround the inventors with as capable a group of advisors as was possible to acquire. While we acquired business-legal talent and during the search for additional talent, the engineers requited themselves by chipping away at the crudity, shining light on the haze of newness, and in general feeling their oats in the attic. The necessary parts come from trash bins, white elephant sales, and surplus houses. Just to get something-to-work seemed the most logical objective. In a few months, something did work, so the next logical step seemed to be to get lots of those to work. To create a stick figure was our immediate goal. We needed room so we expanded to the basement. We needed parts so we all kicked in some change each month. We needed time, but there was never anything we could do about untended babies, un-wined wives, uncut grass, or the insatiable bread and butter responsibilities. Progress was slow, but we got to the stick-figure capability.

At this point in the technological development we began to consider in greater detail some of the additive components which would push us into a full-skin capability. All of a sudden our old faithful bone generator needed calcium - needed greater capability, more refinements. We lacked a basic compatibility.

In a fit of self flagellation we changed circuits, discarded chasses; and wondered why the hell we did what we did. There was no apparent overall progress. At best our bones were a little straighter. Our work meetings seemed disorganized, and home pressures forced sparse attendance.

Then we acquired talent who is expert on the state-of-the-art of the industry we are trying to breach.

He asked, "What will it look like?"

We acquired an on-the-firing-line business executive who asked, "How much will it cost? How long will it take? What is your market?"

The technical group pulled its nose out of the tube sockets and saw its face of short-pronged, non-convergent goals. There was no question about it. We needed a big-picture approach.

So, at the beginning of this year, we went back to the drawing board. Components be damned, it was a system we were designing and a business we were building. There was one question we asked about each part of

the design. Is it compatible?

- a. With the system?
- b. With the requirements of the end product?
- c. With the best interests of the business?

All of a sudden we grew up. Meetings were productive, interesting, and fun. We backed away at the problems one by one. We made plans, and plans to carry out the plans. In brief, we got organized.

The first bit of organization was the defining of the requirements of the system -- and selecting a design which would prove or provide a sound basis for the evaluation of a marketable design. We selected portions of the system to be built first, and this we called our "Jump-Off" design. The J.O.D. was defined and plans for a step by step technical attack were encompassed in 4 tasks:

- I - Systems Design
- II - Circuit Design
- III - Build and Test
- IV - Evaluation

The second bit of organization was to marry the technical and business operations or at least put them on convergent paths. We scheduled our efforts.

The scheduling of efforts required rigorous evaluation of the time and money needed to complete and test each component. A report was prepared and presented to Mr. Tetzlaff on April 15. He was pleased to hear that the J.O.D. will be ready for a systems test and evaluation by August 13, 1962. (if we adhere to our schedule) The test, evaluation, and system debugging should take about two months.

That's our history up to now.

The frustrating problems of our task are those which obviously arise from part-time employment of talent. The self-satisfying rewards of progress, of jobs completed, and of new device-capability are thinly spread. (It will behoove all of us to be patient.)

Businesswise we are in competition in the new industry of computers and data processing. An industry populated with giants whose economic resources are enormous. "What are some factors", we may ask, "that would lead us to assume that we have a chance?"

First of all, we are assuming on our best knowledge that we have a patentable approach to a process basic to human need -- that of making and presenting visual images to the eye in rapid, logical succession, having good quality and in a manner of relative ease and minimum cost at a production speed far greater than anything heretofore dreamed of. We feel this is basic to communication between men and between men and machines.

Second, we assume that even though the giants are powerful they have no corner on the market as far as brains are concerned. Since most of the development expense goes for brains, we are economically competitive by having available without overhead expense, an adequate amount of brainpower.

Third, our efforts are directed towards producing a special purpose, analogue computer for use in a rather large industry which up to now has not been approached by the data processing industry.

Fourth, from all appearances, the basic technology which we are developing looks as if it will have application in many fields, with slight modifications and possibly be basic to a new form of "field" type data processing, using optical circuitry.

Fifth, we live in the knowledge that if successful we will have given the world a new and better tool for use in the production of an old art form which by its very nature is limited only by man's imagination. We will have eliminated the present, most restricting limitations of extremely high cost of production. We also feel that, if successful, each of us will reap ample monetary rewards, which is part of the fun too. Within this broad-spectrumed possibility of spiritual and physical rewards, each of us finds his wave-length and source of enthusiasm to complete this task with an effort not common to ordinary men.

These factors, coupled with continued good judgement and hard work make us competitive.

The growth of the business to this point can be measured by the growth in the number of problems which we've uncovered, the knowledge gleaned, and the solutions proffered. In the near future we see the completion of the J.O.D. - it's possible expansion to a marketable device by the end of the year. By that time we should have completed our market studies and have a comprehensive attack planned for market activity.

At present we think of ourselves as a possible service organization to film and television producers. Our first character to be animated is going to be an astronaut for reasons of 1) simplicity, and 2) for the possibility of interesting major networks in giving their audiences something to look at during the coming geophysical year which we hope will be peppered with moon-shots. (A 24-hour live broadcast would certainly be more interesting with up-to-the-minute animation of actual events.)

Up to this point we have not dwelled on Government business potential, but it is not unrealistic to assume that Cape Canaveral might be interested in having a low-bandwidth-transmission picture of the astronaut's physical posture inside the capsule - which might be easily instrumented by placing small potentiometers on his joints, multiplexing the signals with very lightweight equipment, sending back the signals on normal transmission channels, and building and presenting an exact picture of him with our on-the-ground device.

Training films requiring animation of highly classified projects could be made in a very secure atmosphere of the device without exposing information to the many, highly-trained artists and technicians required now to make such a film.

When one stops to think about it, our applications are many. There's much work to be done.

Lee Harrison, III

June 1962