MANPOWER CONTROL IN LARGE COMPUTER PROJECTS

To a great extent, the manpower strategy appropriate to any organization is related to the size of the organization. It should be borne in mind, therefore, that what I say may not be directly applicable in all circumstances.

I will try to avoid making statements about how you should do things. I should like to talk about some of the things that have **been done** in the organization from which I come. As time goes by, you may enter similar application areas.

BACKGROUND

The Federal System Center

Let me expand a little on the nature of my organization, to give you some feeling for the kind of projects that I shall be describing. I am a member of a group that was established in 1959 by IBM, solely for the purpose of doing contract work for the Federal Government. The Federal Systems Center is the half of the division that does software contract work. We do some hardware engineering, when necessary to configure some special system, but we are primarily a software organization. We presently have about 4000 people. Of these, about half are programmers and analysts. Later I shall give you an outline of the types of job descriptions that we have.

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On joining IBM in 1954 he served as a technical engineer engaged in logical design of the 705 system at Poughkeepsie. There followed a short assignment to develop and teach a programming course for the SAGE Air Defense System. In 1955 he was transferred to Washington D C as an applied science representative in the Federal Marketing activity of IBM, having technical and marketing responsibility for IBM support to non-defense scientific agencies. After a period as a product planner in IBM's Data Processing Division, he became Manager of Applied Science for all Federal Marketing activities. From 1962 to 1967 Mr Aron was responsible for technical coordination for the Federal Systems Center, the software contracting arm of the Federal Systems Division. He became Manager of the FSC Programming Laboratory in 1968 and assumed his present position in 1970. He is currently engaged in writing a book on the "Programming Development Process" for the IBM Addison-Wesley Series. He has published numerous technical papers. In conjunction with Mr A M Pietransanta, Mr Aron developed and taught the widely used IBM Programming Project Management Course.

Mr Aron received a BS degree in Military Engineering from the US Military Academy in 1948, and graduated as 2nd Lt in the Corps of Engineers. He spent six years in the Army, primarily engaged in geodetic surveying.

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test group out of people who primarily are devoted to that type of
activity.

We also have *support programmers*, who in this case are identical to
the general programmer. But their responsibility is not to produce
an end product; their responsibility is to produce the scaffolding
that supports the development process itself.

Of the programmers, about half are female; and the number of female
managers is rising rapidly. At one time, when I had a line manage-
ment division in the organization, two out of the five key managers
were women and, under them, about a third of the managers were women.
Our experience, which I imagine is fairly typical, is that there is
absolutely no difference in the performance of men and women in
similar jobs.

We do, in our peculiar circumstance, have problems of geography.
Our 4000 people are split up into about 60 different locations. Most
of them are in the United States: some of them are overseas, in-
cluding a group in the UK, working in the National Westminster Bank
project.

It is one thing to move a man, with his family, from one location to
another. It may not be so easy to transfer a married woman, who has
to take her husband's career into consideration. About the only
essential difference we have noticed between men and women employees
is in their mobility.

Support

Finally, there are a number of people performing programming support
tasks. The support areas include keypunch, machine operations,
data preparation, report preparation and such like. It is an ob-
vious list, but I found that many of our managers forget to put these
people down. When the time comes to man the project, they forget to
recruit them. When the time comes to punch the cards, they find that
there is nobody sitting at the key punches. So these are very import-
ant. There are one or two other support functions that might not be
so obvious.

I have talked about very large groups. Nobody wants to b

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