

July 1, 1957

MEMORANDUM TO: Mr. D. W. Pendery

SUBJECT: Standardization of input-output equipment - Project 7000

PROPOSAL:

1. That the responsibility of Project 7000 in the input-output area be limited to the exchanges and I/O adapters (sometimes called control units) and specifically to exclude the I/O unit itself.

2. That nearly every machine in the D. P. line having input-output components be adjusted to permit it to be cabled to an adapter and that the adapter be flexible enough that this adjustment be small.

3. That nearly every other IBM computer project, perhaps excepting those already in substantial production, similarly provide adapters rather than I/O units.

4. That the adapters be peculiar to the computer and to the general type of input or output unit it purports to service such as all card readers that read row - wise.

5. That machines that are not complete within themselves (e. g. the 711 card reader which lacks its own power supply) be excluded from this proposal.

REASONS FOR PROPOSAL:

1. The user may select his input - output equipment from almost the entire line of the D. P. Division.

2. Manufacturing need not be geared for extra lines of I/O equipment with each new computer announced; some current lines may even be dropped.

3. Computer requirements for I/O will increase production of standard D. P. machines.

4. Having I/O equipment standard will simplify maintenance and achieve economies thereby.

5. The adapter can be designed without intimate knowledge of the I/O unit to be serviced by it, for all I/O units in the general type it purports to

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service will look alike to the adapter.

WAYS AND MEANS:

1. It is necessary that each unit to be serviced by a given adapter present the same picture to it as each of the others it may service. This "picture" is a cable shoe with a standardized array of input and output lines operating at standardized levels. The equipment to supply this "picture" can be expected in many cases to be too costly to supply it with every unit manufactured. A more practical approach is to provide on every frame a hinge to accommodate the required gate of electronic equipment and, say, a Jones plug to connect it as well as to provide a mounting for a cam shaft and other necessary mechanical devices together with access to a drive shaft. Thus, the gate of electronic equipment and the package of mechanical equipment may be quickly and economically installed, even in the field.

These adjustments may be impossible or may be artificial in many or most items in the current D. P. line but certainly new products can provide them. Incidentally, such adjustments have already been made in the 407 and the 519 for their use with the adapter called the T. D. S. Standardization is thus, achievable by a gradual process with the option of making the greatest effort with the most important units.

Certainly other ways exist for adjusting the unit to present a standard "picture" to all pertinent adapters. Perhaps the reader's of this memo will suggest some.

2. A given unit may be used with different computers but should present only one "picture". Therefore, the adapter servicing it for one computer can be expected to be different from the adapters for other computers.

3. Row to column transposition (and vice versa) is a requirement peculiar to the computer system rather than to the standard D. P. M. Therefore, devices to satisfy this requirement properly belong to the adapters.

REQUEST:

That interested parties comment to the author on the desirability of adopting these proposals, on improvements to them, and on techniques for implementing their adoption.

J. C. Gibson
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JCG:ch

cc: Mr. G. A. Blaauw
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