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**Technological empowerment:
creating local knowledge with calculating practice**

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ABSTRACT

The purpose of this study is to reassemble the process of knowledge construction in terms of measurements and calculations and to indicate the empowerment process enabled by the management mechanism that encompasses measurements and calculations. In order to analyze the case of Material Flow Cost Accounting (MFCA), we have employed the discussion on the relationship between inscription, knowledge and reference (Latour, 1999) and insight from accumulations of inscriptions (Latour, 1987). We analyzed implementation of MFCA in Japanese company by action research and participant observation. Our findings are mainly two points. First, this study shows that the technology of calculation enables the construction of localized practical knowledge by setting up objects of measurements and calculations dexterously. Rather than taking the dichotomous worldview of technological practice and social practice, we grasped the implementation of MFCA as a field of knowledge formation in the actor world created by measurement and calculation practices. Second, as a result, this study also shows that embedding calculating practices within management system programs can have an effect of empowerment. Local knowledge that was generated for each diverse context created power for autonomous actions, and at the same time, the aspect of uniformity of calculation inherent in the program acted for the control of the organization.

Keywords: inscription, knowledge, MFCA