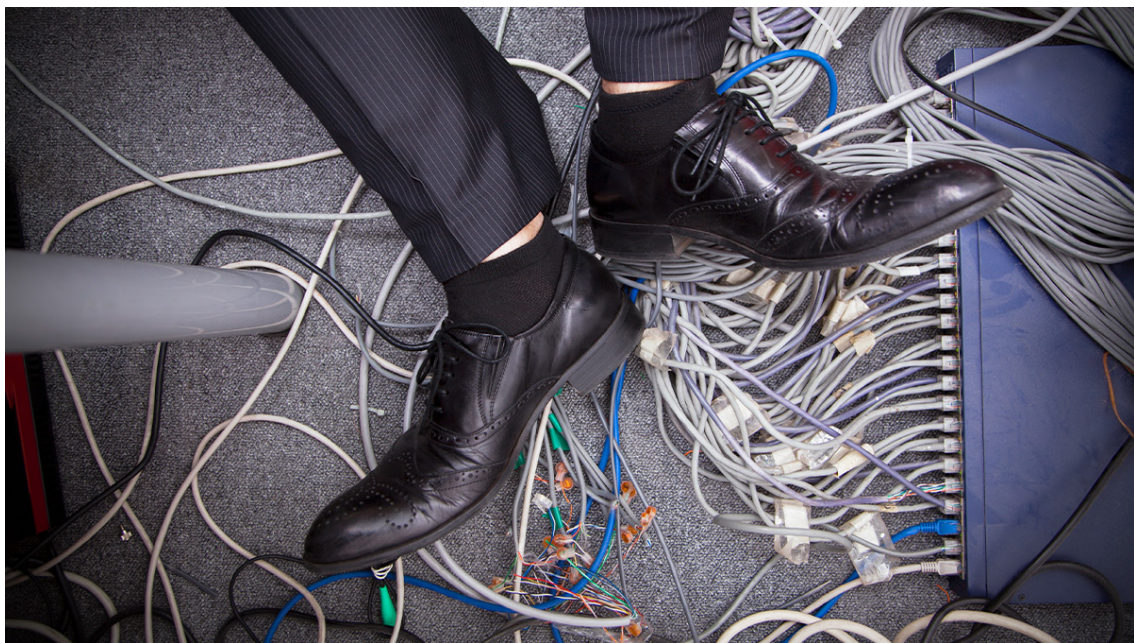**Harvard Business Review**

Managing Organizations

Research: When New IT Systems Shift the Burden onto Employees

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Summary.   Does investing in new IT systems actually save organizations time? To answer this question, researchers conducted a study to estimate the time cost of implementing new IT products for organizations. The results suggest that while introducing new tech certainly has some benefits, it also displaces work onto unsuspecting workers. **close**

Information Technology (IT) vendors often make bold claims about how their products enhance organizations' efficiency. But business executives should be skeptical. Are these technologies actually saving staff departments' time by shifting the work to line managers and employees?

In a study of 247 business software applications representing 28 software types, we found that, without exception, every software product claimed to save staff time through various mechanisms (e.g., numerous kinds of automation, alert systems, integration with other software, digital documents, database management, and data reporting). No doubt organizations have gained some efficiencies, but we have observed that IT investments lead to significant costs that burden line managers and the employees they support. For example, while HR staff would historically explain benefits to employees and complete their paperwork, they now direct employees to an HR portal, placing the labor in the hands of a new employee. Employees are responsible for studying and selecting their benefit options, and maintaining and updating their information, all while navigating a maze of windows, buttons, drop downs, and a logical flow that only makes sense to someone well-trained on the system.

That process takes time, as anyone who has navigated it knows — and sometimes a lot of time. The question for companies is: Is it worth it?

To answer this question, we conducted a study to estimate the time cost of implementing new IT products for organizations. Our research suggests that while introducing new IT products certainly has some benefits for organizations, it simultaneously displaces work onto unsuspecting workers, undermining the gains alleged by IT vendors.

Results of a Study of the Actual Hours Spent Learning IT Systems in a Major Organization

Our study sought to understand the actual costs associated with work displacement among 8,000 managerial and professional employees in a federal government department. We began with a pilot study to

identify the IT systems employees must learn. We found more than 250 software packages that we divided into 18 distinct categories. We then conducted a large-scale job analysis survey to measure how many hours each employee spent learning each type of IT system. The survey was based on a representative sample of 900 managers and employees. The tables below sort our findings.

Employee Learning Required for New IT Systems

Qualitative findings of a survey of 900 managers and employees.

Computer Application	Usage (measured in % of employees)	Known Already (measured in % of employees)	Need to Know More (measured in % of employees)	Some or All Learning Required (measured in % of employees)
1. Word processing and document creation	100	81	17	2
2. Internet browsers	100	95	5	1
3. Travel and leave	98	39	45	16
4. Personal HR data access	98	68	23	9
5. HR services	96	63	28	9
6. Career management	88	69	23	8
7. Requesting services	87	25	47	28
8. Performance evaluation	83	57	33	10
9. Mobile apps	82	39	42	19
10. Document access	80	39	45	16
11. Training	74	66	24	11
12. Social Media	68	79	18	3
13. Database management	40	44	36	20
14. Purchasing	33	33	43	25
15. Work planning and tracking	17	35	40	25

16. Financial budget management	10	24	38	39
17. Grants	7	17	38	45
18. Other	5	35	49	35
AVERAGE	**65%**	**49%**	**33%**	**18%**

Hours Required to Learn New IT Systems

Quantitative findings of a survey of 900 managers and employees.

Computer Application	0 Hours (measured in % of employees)	1-10 Hours (measured in % of employees)	11-20 Hours (measured in % of employees)	21-50 Hours (measured in % of employees)	50+ Hours (measured in % of employees)
1. Word processing and document creation	49	41	5	4	2
2. Internet browsers	74	23	1	1	1
3. Travel and leave	22	67	6	5	2
4. Personal HR data access	46	49	3	2	1
5. HR services	41	51	4	3	1
6. Career management	45	47	4	3	1
7. Requesting services	13	78	6	3	1
8. Performance evaluation	36	56	4	4	1
9. Mobile apps	23	67	5	4	1
10. Document access	27	57	7	7	2
11. Training	43	51	2	2	0

12. Social Media	61	32	6	2	1
13. Database management	27	36	9	13	14
14. Purchasing	20	60	8	8	6
15. Work planning and tracking	35	50	9	5	1
16. Financial budget management	16	55	10	16	3
17. Grants	13	50	11	20	6
18. Other	19	67	11	3	0
AVERAGE	**34%**	**52%**	**6%**	**6%**	**2%**

We asked whether employees actually used a given application, the extent they had to learn it, and how much time they spent learning it over the last two years. (With the exception of word-processing applications and internet browsers, all IT applications listed were imposed on managers and employees by staff departments.)

Almost everyone had to spend time to learn new applications, but the time burden depended on how many employees use the application and the type of application. Applications for document access, requesting services, travel and leave, and mobile apps were used by most employees and had the highest learning requirements. Applications for work planning, database management, purchasing, financial management, and grant management had similarly complex learning and time requirements, but were used by fewer employees. Common applications such as word processing programs and internet browsers required little time investment by employees. HR applications regarding performance evaluations, career management, HR services, personal HR data access, and training were used by nearly all employees and required a moderate investment. Social media usage ranked in the middle since it is not required of all jobs.

We found that the actual time cost of learning new software is meaningful. For example, of those employees who used a software, on average, across the 18 types, 34% spent no time learning, 41% spent 1-5 hours, 11% spent 6-10 hours, and 14% spent more than 10 hours over the last two years. This means that the average employee spends about one week every two years (45 hours) learning software applications. Considering all of the employees in the department and their average salary cost, this translates to $26 million spent every two years, or $13 million annually, to learn these software systems in this organization.

Recommendations Based on Our Research

First, and most simply, managers must become aware of the workload shift that occurs when they invest in new IT products. This awareness can be advantageous not only to workers, but to the staff department deciding which systems to purchase and implement from IT vendors. In other words, when department are considering new IT systems, they should not make the decision to implement independently; they must weigh the potential impact on line managers and employees first.

To this end, some organizations already have effective processes in place that are illustrative. For example, the Office of Management and Budget (OMB) in the federal government acts as a gatekeeper to prevent excessive workload shifting to the American public. Whenever a federal government agency wants to require something from the public, such as completing a new form or survey, they must obtain approval from OMB, which necessitates a detailed description of the need and the cost in terms of workload burden on citizens. Some private corporations have similar systems. Walgreens, for instance, limits when and how much corporate departments can burden the 9,000 stores with requests for information or other initiatives. This centralized management ensures the stores are not overtaxed for requests at one time or during busy seasons, and it limits distractions from their primary work of selling products.

Every organization should consider developing a gatekeeping process such as these to vet prospective IT systems *before* committing employees' time — and company dollars — to implementing them.

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