

DO MINOR CHANGES IN ORGANIZATIONAL EFFICIENCY MATTER? THIS HYPOTHETICAL MODEL SAYS "YES"!

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ABSTRACT

Do moderate increases in organizational efficiency really matter, and can we quantify that? Making people more efficient matters because it allows them to get more work done with a given complement of staff resources, and it can be argued that it is more enjoyable for staff to work in an environment in which more work can be accomplished more easily. There is more of a sense of accomplishment as opposed to a sense of being just another cog in the machine.

The Department of Resources Recycling and Recovery (CalRecycle) Information Technology Services Branch (IT Services) continually implements new technologies with an eye toward improving staff efficiency and productivity. This white paper explores how small increases in efficiency can add up over time, effectively increasing organizational productivity on a measurable scale. The specific example included here compares two hypothetical organizations that begin with 750 PYs, and then compares the effective PYs for them over a 10-year period, with one organization achieving a 2 percent increase in productivity annually and the other experiencing a 2 percent decrease annually. The results are actually quite striking! After a 10-year period, the organization with an annual 2 percent increase in efficiency is functioning like an organization that has more than 900 PYs, and the organization with an annual 2 percent decrease in efficiency is functioning like an organization with about 600 PYs. But they're both still paying for 750 PYs of staff!

PROBLEM/OPPORTUNITY

In fall 2016, the staff at the Department of Resources Recycling and Recovery (CalRecycle) Information Technology Services Branch (IT Services) completed Windows 10 and Office 2016 upgrades for the 700+ staff in its Sacramento headquarters. The new software environment includes features that incrementally make some actions more efficient, like the feature in Outlook that presents the newest files as likely candidates when adding attachments instead users having to click around to find the new files.

As part of the upgrade, all staff were provided with fingerprint scanners. While not all staff are using them, IT Services has received a lot of very favorable feedback and conducted an analysis that indicates that we have 60 percent adoption and have already achieved return on the investment (ROI).

In presenting this information to the Executive team, we wondered if we could draw some larger conclusions about the value of our ongoing efforts to increase organizational efficiency (beyond the ROI for a specific piece of equipment).

ANALYSIS

Can we measure “white-collar productivity”? There are many sources that outline the challenges in measuring “white-collar productivity.” [Per this article](#), “white-collar work is mental work, as opposed to manual labor. Its input is information, and its output is thought. This output might be expressed in words (written or spoken) or through pictures (drawings, sketches, diagrams, etc.); but the defining characteristic of white-collar work is that its only product is the product of the mind.” Of course, it’s difficult to measure “products of the mind”! [Another article](#) makes reference to Peter Drucker and research that indicates that:

“White-collar employees are productive only about 50 percent of the time. The remainder is non-productive [wasted] time and can be traced to personal delays (15 percent) and improper management (35 percent).”

The article lists what it considers seven causes of wasted time (see table below). Certainly it is reasonable to question the objectivity of that assessment. Nevertheless, these can be causes of inefficiency at some level, and we believe we have technologies in place in CalRecycle that can positively impact many of these areas.

Causes of Inefficiency (from TQM website)	CalRecycle Technologies to Help Address
1. Poor scheduling	Outlook/Exchange Calendaring; Lync/Skype presence management ; SharePoint
2. Slack start and quit times	Lync/Skype presence management , Citrix Remote Access
3. Lack of communication between functions	SharePoint Project sites, web conferencing; Lync/Skype Instant Messaging
4. Information overload	Enterprise Search , and full Outlook Email indexing
5. Poor staffing	(?)
6. Inadequate communication of assignments	Outlook access via desktop or Citrix or OWA or Smartphone; SharePoint
7. Unproductive meetings and telephone conversations	Lync/Skype Instant Messaging , video calls for individuals & groups , impromptu desktop sharing via Skype , web conferencing

It’s worthwhile to point out that the text marked in blue in the right column are the names of capabilities NOT available in most State organizations, since CalRecycle is still the only State organization that has fully implemented Lync/Skype VOIP, and most other State organizations have NOT implemented Enterprise Search, and most do not have full Outlook email indexing, etc.

So, does this matter? We think it does. As stated above, 60 percent of staff are using the fingerprint scanners. In addition, about 75 percent are using Lync/Skype instant messaging; and about 25 percent of staff use SharePoint Enterprise Search during every two-week reporting period. People would not be using these technologies if they didn’t add value--people don’t search work documents for fun!

Do Minor Changes in Organizational Efficiency Matter? This Hypothetical Model Says "Yes"!

In light of this information, which indicates incremental growth in the use of various technologies, we sought some way to characterize the accruing of these benefits over time. While [Albert Einstein](#) probably never did say that “compound interest is the eighth wonder of the world,” it nevertheless is the case that compounding accumulations of funds over time invested at a specified interest rate seems almost wondrous. Of course, the inverse is true for the compounding of losses, and the mathematics is identical whether the numbers represent dollars or staff.

The tables below show the accrued benefit of a fairly minor 2 percent increase in efficiency or productivity compounded across a ten-year period, and this is compared to a similarly minor 2 percent reduction in productivity across that same period. The value of 2 percent was chosen because it seems reasonable and quite conservative and because the [overall US GDP has grown at a rate of about 2-3 percent](#) annually for the last 60 years. Now, this is a hypothetical example, but it does seem like it rings true and certainly we all know efficient and inefficient organizations.

This example uses CalRecycle, an organization formed in 2010 through a merger of the California Integrated Waste Management Board and the Division of Recycling (formerly part of the Department of Conservation). It has now been seven years since the merger that created CalRecycle, so a ten-year period is reasonable. The table compares two hypothetical organizations that begin with 750 personnel, referred to here as PYs for personnel-year but often referred to as FTEs for full-time employees. The analysis compares the effective PYs for the organizations over a ten-year period, with one organization achieving a 2 percent increase in productivity annually and the other experiencing a 2 percent decrease annually. The results are actually quite striking.

After a ten-year period, the organization with an annual 2 percent increase in efficiency is functioning like an organization that has more than 900 PYs, and the organization with an annual 2 percent decrease in efficiency is functioning like an organization with about 600 PYs. But they’re both still paying for 750 PYs of staff!

Again, this is just an example, but it does not seem unreasonable. Also, if we were to look at actual [budgeted PYs](#) over the years, we can see the ebb and flow based on program and legislative priorities, which is appropriate. But the hypothetical increases and decreases of effective PYs that we see here are probably far larger than changes in actual budgeted PYs for many State organizations over a similar time period. Clearly, this is a leap based on a hypothetical example, but it shows overall substantial changes in “effective” PYs based on fairly modest but consistent increases or decreases in organizational productivity.

Annual Efficiency	Budgeted PY	Annual Efficiency	Budgeted PY
-2%	750	+2%	750
Year	Effective PY	Year	Effective PY
Year 1 =	735	Year 1 =	765
Year 2 =	720	Year 2 =	780
Year 3 =	706	Year 3 =	796
Year 4 =	692	Year 4 =	812
Year 5 =	678	Year 5 =	828
Year 6 =	664	Year 6 =	845
Year 7 =	651	Year 7 =	862
Year 8 =	638	Year 8 =	879
Year 9 =	625	Year 9 =	896
Year 10 =	613	Year 10 =	914

SUMMARY

It is acknowledged that it is difficult to measure "white-collar productivity". Nevertheless, it is similarly acknowledged that it is a real thing and makes a real difference in how an organization functions. The analysis presented here provides background regarding organizational efficiency and presents a specific example which compares two hypothetical organizations that begin with 750 PYs, and then compares the effective PYs for them over a 10-year period, with one organization achieving a 2 percent increase in productivity annually and the other experiencing a 2 percent decrease annually. The results are actually quite striking! After a 10-year period, the organization with an annual 2 percent increase in efficiency is functioning like an organization that has more than 900 PYs, and the organization with an annual 2 percent decrease in efficiency is functioning like an organization with about 600 PYs. But, they're both still paying for 750 PYs of staff! Is this strictly hypothetical or does this circumstance occur in the real world? While we can provide no specific quantified example, we all have experience in dealing with organizations that operate in this manner: (a) the efficient and nimble organization that is responsive to the customer and meets their needs, versus (b) the ponderous organization that appears overstaffed and seemingly unable to get the simplest task accomplished accurately and efficiently. This description almost certainly resonates with the reader even in the absence of specific data!

Making people more efficient matters because it allows them to get more work done with a given complement of staff resources, and it can be argued that it is more enjoyable for staff to work in an environment in which more work can be accomplished more easily. There is more of a sense of accomplishment as opposed to a sense of being just another cog in the machine. Relatively minor but continuous improvements can lead to significant differences in overall organization effectiveness.