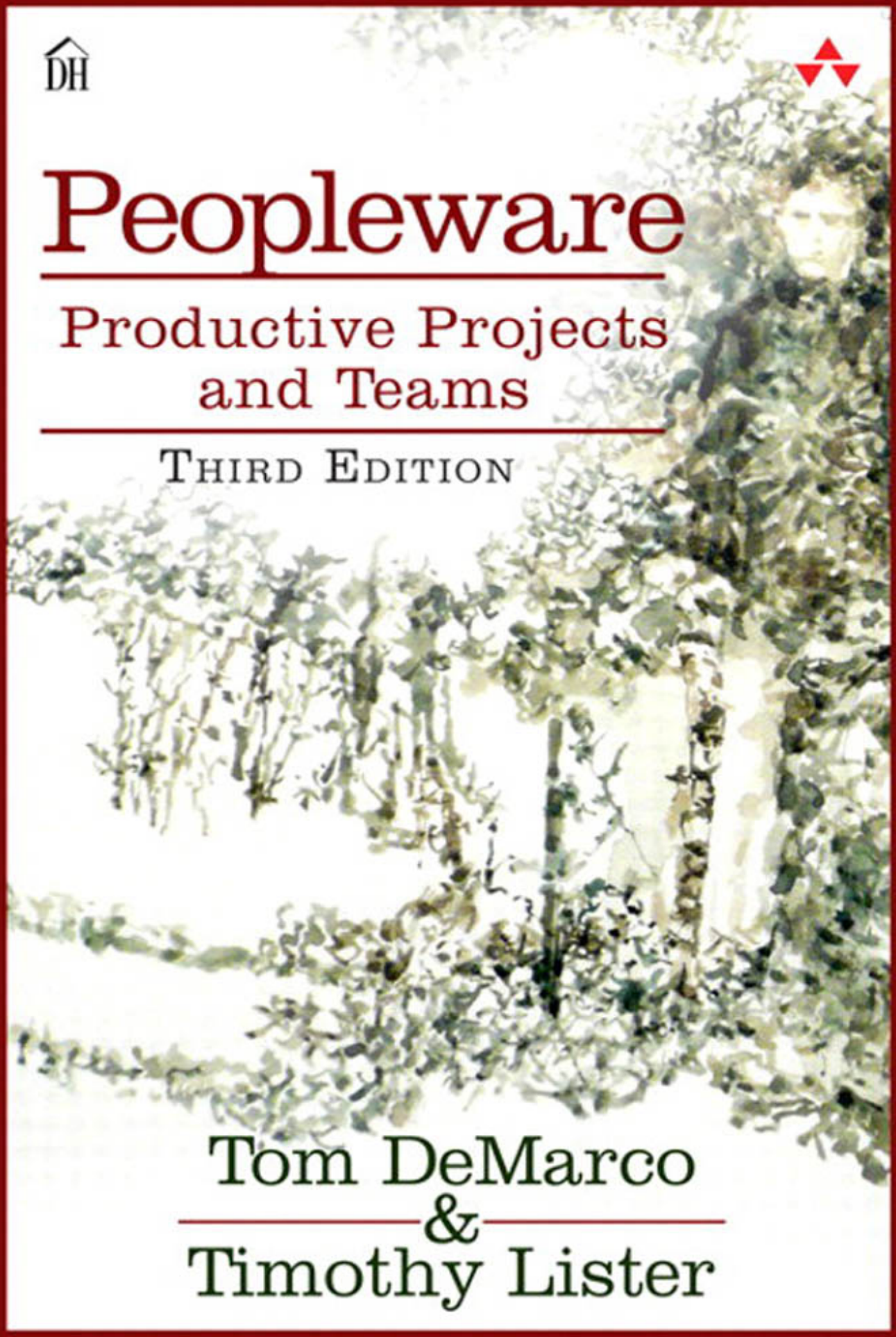
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Third Edition
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TABLE 10–2 Segment of a CWG Time Sheet

Work Period From–To	Type of Work	What Interruption Caused the End of This Work Period?
2:13–2:17	Coding	Phone call
2:20–2:23	Coding	Boss stopped in to chat
2:26–2:29	Coding	Question from colleague
2:31–2:39	Coding	Phone call
2:41–2:44	Coding	Phone call

Time Accounting Based on Flow

Chances are, your company's present time-accounting system is based on a conventional model. It assumes that work accomplished is proportional to the number of paid hours put in. When workers fill out their time sheets in this scheme, they make no distinction between hours spent doing meaningful work and hours of pure frustration. So they're reporting body time rather than brain time.

To make matters worse, the task-accounting data is also used for payroll purposes. This compels employees to make sure that the total number of hours logged always balances out to some predetermined total for the week, regardless of how much overtime or undertime they put in. The resultant compilation of official fictions may be acceptable to the Payroll Department: It is equivalent to the worker responding "Present" to a roll call. But for any productivity assessment or analysis of where the money went, this record is too badly tainted to be useful.

The phenomena of flow and immersion give us a more realistic way to model how time is applied to a development task. What matters is not the amount of time you're *present,* but the amount of time that you're *working at full potential*. An hour in flow really accomplishes something, but 10 six-minute work periods sandwiched between 11 interruptions won't accomplish anything.

The mechanics of a flow-accounting system are not very complex. Instead of logging hours, people log *uninterrupted* hours. In order to get honest data, you have to remove the onus from logging too few uninterrupted hours. People have to be assured that it's not their fault if they can only manage one or two uninterrupted hours a week; rather it's the organization's fault for not providing a flow-conducive environment. Of course, none of this data can go to the Payroll Department. You'll still have to retain some body-present time-reporting for payroll purposes.

A task-accounting scheme that records flow hours instead of body-present hours can give you two huge benefits: First, it focuses your people's attention on the importance of flow time. If they learn that each workday is expected to afford them at least two or three hours free from interruption, they will take steps to protect those hours. The resultant *interrupt-consciousness* helps to protect them from casual interruption by peers.

Second, it creates a record of how meaningful time is applied to the work. If a product is projected to require three thousand flow hours to complete, then you've got a valid reason to believe you're two-thirds done when two thousand flow hours have been logged against it. That kind of analysis would be foolish and dangerous with body-present hours.

The E-Factor

If you buy the idea that a good environment ought to afford workers the possibility of working in flow, the collection of uninterrupted-hour data can give you some meaningful metric evidence of just how good or bad your environment is. Whenever the number of uninterrupted hours is a reasonably high proportion of total hours, up to approximately 40 percent, then the environment is allowing people to get into flow when they need to. Much lower numbers imply frustration and reduced effectiveness. We call this metric the *Environmental Factor* or *E-Factor:*

E-Factor = Uninterrupted Hours/Body-Present Hours

A somewhat surprising result of collecting E-Factor data is that factors vary within an organization from site to site. For example, we recorded E-Factors as high as 0.38 and as low as 0.10 in one large government agency. The agency's head assured us that the physical environment had to remain as it was, no matter how bad, because characteristics of the workplace were determined by government policy and by civil service level. In spite of this, we found some sites where workers were housed in a tight, noisy open-office plan, and others where workers doing the same job and at the same level worked in pleasant four-person offices. Not so surprising was the finding that E-Factors were markedly higher in the four-person offices.

E-Factors can be threatening to the status quo. (Perhaps you'd better not even start collecting the data.) If you report 0.38 for a sensible space and 0.10 for a cost-reduced space, for example, people are likely to conclude that the cost reduction didn't make much sense. Workers in the 0.10 space will have to put in 3.8 times as much body-present time to do a given piece of work

as those in the 0.38 space. That means having work done in the cost-reduced space could result in a performance penalty that is far greater than the space savings. Clearly, such a heretical line of reasoning must be suppressed. Otherwise we jeopardize all those wonderful "savings" to be gained by tightening up your workers' spaces. Burn this book before anyone else sees it.

A Garden of Bandannas

When you first start measuring the E-Factor, don't be surprised if it hovers around zero. People may even laugh at you for trying to record uninterrupted hours: "There is no such thing as an uninterrupted hour in this madhouse." Don't despair. Remember that you're not just collecting data, you're helping to change people's attitudes. By regularly noting uninterrupted hours, you are giving official sanction to the notion that people ought to have at least some interrupt-free time. That makes it permissible to hide out, to ignore the phone, or to close the door (if, sigh, there is a door).

At one of our client sites, there was a nearly organic phenomenon of red bandannas on dowels suddenly sprouting from the desks after a few weeks of E-Factor data collection. No one in power had ever suggested that device as an official Do Not Disturb signal; it just happened by consensus. But everyone soon learned its significance and respected it.

Of course, there have always been certain cranky souls who have stuck up Do Not Disturb signs. Peer pressure makes it hard for most of us to show that interruptions aren't welcome, even for a part of the day. A little emphasis on the E-Factor helps to change the corporate culture and make it acceptable to be uninterruptable.

Thinking on the Job

In my years at Bell Labs, we worked in two-person offices. They were spacious, quiet, and the phones could be diverted. I shared my office with Wendl Thomis, who went on to build a small empire as an electronic toy maker. In those days, he was working on the Electronic Switching System fault dictionary. The dictionary scheme relied upon the notion of n-space proximity, a concept that was hairy enough to challenge even Wendl's powers of concentration. One afternoon, I was bent over a program listing while Wendl was staring into space, his feet propped up on the desk. Our boss came in and asked, "Wendl! What are you doing?" Wendl said, "I'm thinking." And the boss said, "Can't you do that at home?"

—TDM

The difference between that Bell Labs environment and a typical modern-day office plan is that in those quiet offices, one at least had the option of thinking on the job. In most of the office space we encounter today, there is enough noise and interruption to make any serious thinking virtually impossible. More is the shame: Your people bring their brains with them every morning. They could put them to work for you at no additional cost if only there were a small measure of peace and quiet in the workplace.

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The Telephone

When you begin to collect data about the quality of work time, your attention is automatically focused on one of the principal causes of interruption, the incoming telephone call. It's nothing to field 15 calls in a day. It may be nothing, but because of the associated reimmersion time, it can use up most of that day. When the day is over and you're wondering where the time went, you can seldom even remember who called you or why. Even if some of the calls were important, they may not have been worth interrupting your flow. But who's got the nerves to wait out a ringing phone? The very thought of it makes you tense between the shoulders.

Visit to an Alternate Reality

Now just relax and imagine a less complicated world in which the phone has not yet been invented. In such a world, you write a note to propose lunch or a meeting and you get a note in response. Everyone plans ahead a little bit more. It's common to take half an hour in the morning to read and answer your mail. There are no loud bells in your life.

Wednesday mornings in this alternate reality are dedicated to meetings of your company's pension trust investment committee. Imagine for the moment you are one of the employee representatives charged with watching where the money is placed. On this particular Wednesday, an inventor is scheduled to make a presentation to the committee. The inventor has plans to change the world, if only you'll invest in his new contraption. His name is A.G. Bell.

"Ladies and Gentlemen, this is the BellOPhone!" (The man unwraps a large black box with a crank on the side and an enormous bell attached to the top.)

"This is the future. We're going to put one of these on every desk in America. Homes, too! It will get to the point where people can hardly imagine a world without them."

As he warms up to his subject, he begins gesticulating enthusiastically and hopping around the room to make his points. "BellOPhones everywhere you look, all of them hooked up together with wires under the street or overhead. And now this is the really exciting part: You can get your BellOPhone specifically connected to somebody else's BellOPhone, even though it may be all the way across the city or maybe in some other city. And when you've connected it just by entering the code, you can make the bell ring on the other fellow's machine. Not just some rinky-dink bell, either, but a real heart-stopper."

He sets up a second device and connects it to the first, on the other side of the room. By manipulating a dial on the face of the first, he causes the other machine to come alive. It gives off a loud BBRRRRIINNNGGGG! After half a second, it rings again and then again and again, deafeningly.

"Now, what's a fellow got to do to stop this ringing? He's got to race over to his BellOPhone and pick up the receiver." He picks up the receiver on the ringing device and hands it to one of the committee members. Then he bounds back to the other side of the room and starts shouting into the mouthpiece of the originating device. "'Hello! Hello! Can you hear me?' See that, I've got his complete attention. Now I can sell him something, or get him to lend me money or try to change his religion or whatever I want!"

The committee is stunned. You raise your hand and venture a question, "Since nobody could possibly have missed the first ring, why bother to repeat it?"

"Ah, that's the beauty of the BellOPhone," says A.G. "It never gives you the chance to wonder whether you want to answer it or not. No matter what you're involved in at the time it rings, no matter how engrossed you are, you drop everything to answer it. Otherwise, you know it will just keep on ringing. We're going to sell billions of these things and never ever allow any to be sold that rings only once."

The committee goes into a huddle, but it doesn't take very long to come up with a judgment. You all decide without a dissenting voice to throw this turkey out the door. The device is so disruptive that if you were ever dumb enough to allow it to be installed, nobody would ever get any work done around the office. A few years' effect of the BellOPhone and we'd all be reduced to buying goods from Taiwan and Korea. And our country might even have a negative balance of trade.