Business Rule Solutions Ron Ross

What's Wrong with the Term 'Knowledge Worker'

Perhaps you've been using the term 'knowledge worker' in your work without giving it a lot of thought. These days of course more and more business processes have to do with knowledge work. But does 'knowledge worker' allow you to make the distinctions needed for including business rules effectively in your process models? What terms would be better suited? How will those terms help you understand workers' relationships with both operational business decisions and business rules? This column examines the three basic kinds of workers involved in business process models, and discusses how the distinctions among them are important for engineering smarter business solutions.

In a day and age where the automation of operational business decisions is increasingly the goal, I maintain that *knowledge worker* is the wrong term for business process modeling. The term is simply too broad. Instead I use the terms *white-collar worker* and *gold-collar worker*. What's the key differentiation?

- The work of *gold-collar workers* involves *non-routine* problem solving, which requires a "a combination of convergent, divergent, and creative thinking" [*Wikipedia*].

- The work of *white-collar workers* involves fairly repetitious sets of tasks, which at least in theory should produce relatively consistent results. Also, white-collar workers generally receive much less training than gold-collar workers.

Although the boundary between the two categories is a bit fuzzy, I believe they generally can be distinguished. Relevant questions include:

- How routine is the work?
- How consistent should results of the work be?
- How much training is required?

As an example, consider loan officers in a bank handling applications for mortgages. *White-collar or gold collar?*

- *Routineness.* I'd call their work relatively routine. Even though each loan application is different and might involve special cases or exceptions, the work is always about mortgages.

- *Consistency.* You'd like to think different loan officers could produce consistent results on similar kinds of loan applications. Although certainly true

in theory, it's often not the case in practice. More about that momentarily.

- *Training.* Although loan officers do receive significant training and mentoring, it's not on the order of years as for gold-collar workers.

Based on this analysis I believe loan officers fall into the *white-collar* category.

What about consistency of results? I've seen studies comparing results across peers with roughly the same training and experience. The numbers are significantly lower than you might expect. That's not at all a good thing for either customer experience or the well-being of their organizations.

So why not *automate* the white-collar decision-making work?!

Automating white-collar decision-making work *well*[1] is exactly the focus of business rules and decision engineering. From experience, I'm certain that at least 50% to 80% (maybe more) of the decision work for mortgage applications can be automated, especially if a company is willing to standardize and simplify the adjudication rules some. Huge benefits can be achieved in terms of consistent customer experience, higher productivity, and directly provable compliance.

Can You Differentiate Between White-Collar Work and Gold-Collar Work by Whether It Can Be Automated?

My Answer: *In a day and age when IBM Watson can win at Jeopardy, I think it's probably foolish to try.*

But I don't think that's the right question. Instead, I would ask whether the problem spaces are sufficiently distinct that they require different approaches. The answer to that question is definitely *yes*. That's one reason I think it's important not to say simply *knowledge worker* in process models.

Companies pay gold-collar workers for their professional insight, creativity, and ability to digest huge amounts of knowledge on a continuous basis. Novel, unexpected results that fit the data better are at a premium.

That's *not* what companies pay white-collar workers for – or at least it shouldn't be. Instead, they should pay white-collar workers to produce *consistent* results on decisions reached through *directly traceable* logic – that is, business rules. Unexpected results represent a *failure* – of an individual worker, a training regimen, or the rules themselves.

More often than not, I think the problem actually lies with the rules. In many companies, we ask humans to make operational business decisions in a fog of byzantine rules – rules often far more complex than reasonable (or profitable). In addition, the 'real' rules are frequently more tacit or inaccessible than anyone cares to admit.

In my view we simply have never been serious about defining, organizing and managing *the rules* in white-collar decision-making in a reasonable, scalable manner.

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[1] Mortgage applications are not automated *well* if rules simply refer applications to humans when the rules cannot handle them.

And we certainly haven't yet harnessed the power of computers to help with the business-side problem of rule management.

Can You Differentiate 'Knowledge Workers' by How Much Improvising or Innovating is Desired?

Some people argue that a knowledge worker is someone who gets paid to improvise or innovate, a factor distinct from the amount of training the worker receives. By this criterion even blue-collar workers can be considered knowledge workers if they constantly improvise or innovate.

I don't find this notion helpful. In my mind, a blue-collar worker who is constantly improvising or innovating, for example, has become an *engineer* — which is gold-collar, not blue-collar.

With respect to white-collar work, what I see in many organizations is *white-collar entropy*, all resulting from continuous and counterproductive 'improvising'. A vacuum of coordination filled with too much information simply does not translate into a more productive organization. The more likely result is inconsistency, the enemy of good customer experience.

The improvise-and-innovate argument also holds that knowledge workers don't just apply rules — they *invent* rules.

Hang on a minute. To take a real-life example, do we really want police officers (officers on the beat) inventing rules?! *I think not.* Their job is to *apply* rules (laws), *not* invent them. Otherwise we'd be living in a police state.

In a well-run organization, just as in society, above all you want consistency at the operational level. If I call my bank ten different times, I should get the same answer ten different times. If I apply for a mortgage from the same bank at ten different branches, I should get the same result ten different times.

In my experience, that's hardly the norm. Why? If staff works in an environment where many of the rules are tacit, contradictory, ambiguous, poorly implemented, inaccessible, and/or unintelligible, *of course* the staff will improvise.

Contrary to what some believe, well-defined rules do not lessen creativity (space to improvise and innovate about how to get desired results). That's not the way it works. Absence of rules is literally anarchy — and only the bad guys look clever in that context.

How Do Service Workers Fit with White-Collar and Gold-Collar Workers?

Pink-collar worker is a term sometimes used (in the U.S. at least) to refer to a job in the service industry. Many people find the term off-putting because it traditionally referred to jobs relegated to women.

I avoid the term for several other reasons. The category includes:

- Such people as nurses and teachers, who are clearly *gold-collar*.

- Such roles as buyers, loan interviewers, dieticians, administrative assistants, etc., whose work at the high-end should be considered *white-collar*.

- Many workers providing personal services on an individual basis, rather than business services in the usual sense. Examples include midwives; hairdressers and barbers; baby sitters and nannies; personal shoppers and fashion stylists; etc.

Clearly many businesses do have extensive staff that is neither white-collar nor gold-collar working to deliver services. Examples include retail workers, sales staff, flight attendants, hotel housekeepers, counter attendants, receptionists, etc. I just call them *service workers* since they don't have any traditional uniform color — white, blue or otherwise.

Are service workers subject to business rules? *Absolutely.* Generally these rules are behavioral rules rather than decision rules, however, since their jobs do not focus on operational business decisions.

How Are Relationships to Business Rules Different for Service Workers vs. White-Collar Workers vs. Gold-Collar Workers?

There are two fundamental kinds of business rules: *behavioral rules* and *decision rules.*[2] Behavioral rules are rules people can violate; decision rules are rules that shape knowledge or information. Decision rules cannot be violated — knowledge or information just is what it is defined to be. Common to all business rules, no matter which category, is that you want them directly traceable for compliance and other purposes.

Service workers are primarily subject to obeying behavioral rules, or are charged with applying them. Examples:

- *A counter attendant must not accept a credit card for a purchase under $10.*
- *A flight attendant must ensure passengers have buckled their seat belts for each take-off and landing.*

Service workers are subject to operational business decisions made by white-collar workers, but do not play a significant role in making such decisions themselves.

White-collar workers are typically involved in business processes where operational business decisions are made. Examples:

- *Should this loan applicant be given a mortgage?*
- *What flight crew should be assigned to this flight?*

White-collar workers generally do not define decision rules themselves — that's typically work for gold-collar workers. Where such rules are incomplete, unspecified or contradictory, however, white-collar workers generally rely on personal heuristics

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[2] Ronald G. Ross, "Decision Rules vs. Behavioral Rules," *Business Rules Journal*, Vol. 14, No. 7 (July 2013), URL: http://www.BRCommunity.com/a2013/b709.html

and experience to make decisions. This approach puts the main goals for white-collar work – *consistency* and *traceability* – at serious risk.

White-collar workers, like all workers, are subject to behavioral rules. Examples:

- *A loan officer must not handle a loan application placed by a family member.*
- *The website description for a new product must be approved by two senior managers.*

Gold-collar workers are responsible for non-routine, knowledge-intensive work. The primary goals for such work is that it be insightful (e.g., as in the case of medical diagnosis that fits the available data better) or creative (e.g., as in the case of a new marketing strategy). This type of work is generally beyond the scope of decision rules.

Although gold-collar workers often conduct their work in relatively independent fashion, the work is generally subject to "very close normative control from organizations they work for" [*Wikipedia*]. Think medical malpractice or following generally accepted principles of accounting. These normative controls, since they can be violated, are sets of behavioral rules.

Author

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