

Work Reconsidered

Increasing productivity with humaneering (part 3).
By James Pepitone.



An executive who attended my presentation on humaneering at the 1999 World Productivity Congress in Edinburgh recently contacted me. He saw the first two parts of this article (Autumn 2014 and Winter 2014) and was curious to learn more about what had transpired in the ensuing 15 years. After learning about this journey, he suggested that other readers might also be interested in these details. Following his advice, this final instalment starts with some of that history before discussing the problem humaneering was developed to solve, more about

humaneering's architecture for human work systems, and a few final thoughts on the case for humaneering.

Finding potential everywhere

Very early in my career I realised that I naturally perceive how organisations can more fully utilise the productive capabilities of their people, even for organisations already well managed and successful. Not surprising, my insight steered me toward a career of management consulting, which has since provided me with a continuous stream of client situations in which to

▼ Figure 1

Fragmented Science Disciplines

Humaneering harvests relevant science-based knowledge from theory and practice disciplines like these, and then translates this insight into more useful guidance for management:

- Applied psychology
- Behavioural economics
- Cognitive psychology
- Cognitive science
- Complex adaptive systems
- Clinical psychology
- Developmental biology
- Educational psychology
- Environmental sociology
- Human factors
- Human resources
- Humanistic psychology
- I/O Psychology
- Industrial engineering
- Innovation science
- Instructional design
- Leadership
- Knowledge management
- Managerial economics
- Management science
- Neuroscience
- Operations management
- Operations research
- Organisation behaviour
- Organisation development
- Positive psychology
- Social psychology
- Sociobiology
- Sociocultural anthropology
- Sociotechnical systems
- Strategic management
- Systems science
- Work design

Subsequent efforts to integrate most of these principles into work design and management methods yielded 'surprising' increases in productivity.

study the causes and cures for this waste.

One client situation during the mid-80s was particularly enlightening. This large organisation of mostly engineers engaged in innovative product design and development work was experiencing declining productivity as the organisation grew in size. Separate attempts by two major consulting firms to reverse this trend were unsuccessful, so management looked for other options and received a recommendation to retain my much smaller practice and its unique focus on improving the productivity of people-dependent operations.

Both the management and professional staff were by now weary of consultants' advice, which challenged us to seek an original approach that still had high face validity. Keeping the story short, we devised a process that engaged representatives of the professional staff to join our consultants in a systematic review of relevant human science literature, and to translate the findings into a model for high productivity professional work.

To the client's surprise, more than 80% of the human science principles determined by its engineers to be essential for achieving high levels of productivity, were either missing or violated in the firm's current approach to work design and management. Subsequent efforts to integrate most of these principles into work design and management methods yielded 'surprising' increases in productivity. In management's defence, it was also clear to virtually everyone involved that there was no other practical way management could have acquired this knowledge.

The literature review uncovered Professor Tiffin's book, *The Psychology of Normal People* (1940), and its use of the term

humaneering to label Tiffin's vision for an applied science that would give managers easy access to relevant human science findings. (See part 1 for excerpts from this book.) Everyone involved, including the client, thought the term *humaneering* clearly conveyed the essence of the productivity model we created together, so that is what we named it.

Using the productivity model

In the years that followed, my firm utilised this productivity model as a reference tool when diagnosing other client situations. It enabled faster, more accurate diagnosis of the typically illusive conditions that were impeding human performance and productivity. We updated it as solutions to client challenges created new knowledge, and as scholars published relevant new research findings. By the mid-90s, the original productivity model had evolved into a comprehensive set of tools and instructions for the design, diagnosis and development of high-productivity people-dependent operations.

Still, it was not until my article, 'A Case for Humaneering', appeared in *IIE Solutions* (May 2002), a publication of the Institute of Industrial Engineers, that the pathway for creating a humaneering applied science became clear. The article prompted a retired engineer to contact me. He was troubled with how engineering thinking was being applied throughout human affairs (eg, work, education, medicine) without a balancing consideration of people and their human nature. He said that when he saw the article, he finally imagined a way to address this problem.

We combined our interests to imagine humaneering one day becoming a universal applied human science, much like Tiffin envisioned. We planned a 10-year initiative that would start fresh and rely heavily on open-source input from scholars, practitioners and managers. Humaneering would be developed for the public good, which meant that we would need to proceed without drawing attention and protect humaneering from getting into proprietary hands. He contributed the necessary funding and a network of helpful industry contacts, and I contributed my accumulated intellectual property and donated my time to lead the development process.

Fragmented science

The plan for humaneering's development was to harvest human-science knowledge from all theory and practice disciplines with insight to offer, and then to somehow synthesise this knowledge into more useful management guidance. The resulting principles, methods and tools would be utilised in much the same way that engineering already enabled organisations to apply the physical sciences.

Consider this. In 2002, Professor Sara L. Rynes and colleagues at the University of Iowa reported in the academic journal, *Human Resource Management* (Summer, p149-174), findings of a survey sponsored by the Society for Human Resource Management (SHRM). The purpose of the research was to determine how well higher level HR professionals in the US know the most indisputable scientific findings relevant to managing human resources.

The 959 respondents to this test averaged a disappointing score of 57% correct answers, and further reported that less than 1% of them read the leading research journals for their discipline. My dissertation research in 2009 utilised this same test with mid- to high-level managers in the US (eg more than half had 16+ years of experience, had a master's degree, and worked for a company with over 10,000 employees). Management scored no better than the HR professionals. Follow-up interviews revealed a closed cycle of knowledge exchange between higher level HR professionals and management.

As Tiffin could imagine even 75 years ago, the challenge to

The performance achieved by a job role is mostly determined by the effectiveness within and interaction between these three components.

utilising science-based knowledge extends well beyond just getting HR professionals and management informed about their respective science disciplines. Research relevant to human performance is now pursued in more than 100 theory or practice disciplines, each specialising in a virtual silo of discovery.

Figure 1 lists some of the more recognised disciplines providing meaningful insight during the recent development of humaneering. The involved scholars assessed that even the most helpful individual discipline contributed less than 20% of the knowledge that proved essential for creating humaneering's 'job role work system' architecture. Who among us can honestly say that we possess the relevant knowledge from all these disciplines?

Even if it was practical for HR professionals and management to do so, just accessing this knowledge would not be sufficient. It would be necessary to also translate and synthesise this knowledge. Adding to the challenge, many disciplines overlap



▼ Figure 2

JOB ROLE WORK SYSTEM ARCHITECTURE						
	COMPONENT SYSTEMS					JOB ROLE WORK SYSTEM
	Work		Worker		Work Environment	Work System
Focus	Value		Fit		Effort	Performance
Objective	Maximise potential economic value of job role		Maximise 'fit' of workers to job role		Maximise personal effort of workers in job role	Maximise economic value created by human capital
Goal	Conceive job role to enable workers to maximise the economic value created when achieving the job role's business process function		Select, develop and support individual workers to maximise their 'goodness of fit' to the Work (for T2)* and Work Environment (for T1)* component systems		Develop and maintain work environment to maximise individual worker effort (for T2)* and job role economic value (for T1)*	Work System is managed through the design of its component system architecture to maximise the productiveness of human capital in creating economic value while achieving the job role's business process function
Drivers of Performance	Function & contribution Responsibilities & tasks Employment terms Management approach Opportunity & advantage Enabling technology		Career aspiration Self-concept and motives McClelland competencies Demonstrated strengths Personality & behaviour Expertise & experience		Respect & assistance Improvement support Workplace culture Management systems Co-worker behaviour Facilities and tools	Component systems: Work Worker Work environment
Performance Index**						
Optimal	1.0	X	1.0	X	1.0	= 1.0
Range to Date	.08 to .41	X	.19 to .53	X	.13 to .59	= .04 to .12

* T1 and T2 refer to Type 1 (task) and Type 2 (responsibility) work. See Part 1 and Part 2 of this article for additional detail.

** The Performance Index is a theoretical measure of human work system effectiveness. Following in-person assessment, index values are assigned to the Component Systems by the business managers involved. The multiplicative effect indicated attempts to approximate rationally the witnessed interconnectedness of the Component Systems within the Work System. The Range to date noted reflects values assigned by host company managers during humaneering field tests (see Part 1 and Part 2 for more on these tests). The relatively low values are attributed to causes within management's control: (1) neglected opportunities to create increased economic value, (2) tolerated constraints to effectiveness, and (3) unintended misalignment within and among component systems.

in focus, but disagree in their approach and theories. Finally, it would be necessary to subject any resulting recommendations to application testing within actual business operations. Hence the value of humaneering, which does all of this to develop science-based methods to achieve more productive human work.

Just progress or a paradigm change

Humaneering's goal is similar to other applied sciences (eg, engineering, meteorology), which is to facilitate the use of science-based knowledge and methods to deal with actual challenges. The challenge on which humaneering is focused is how to design and manage human work to maximise a worker's productivity (ie, economic value created/total compensation).

What started with the harvesting of relevant knowledge from diverse theory and and practice disciplines quickly uncovered knowledge gaps, conflicts between disciplines, over-promoted research findings, and other challenges to utilising this knowledge. Then, when testing research-identified variables for their operational impact, we found over and over that just because variables statistically 'correlate' with performance in the research data does not mean that they either cause or constrain business results. We were quickly reminded that job roles are work systems and their output is the emergent result of many systemic forces.

Once all the facts were in, it became clear that what currently passes for the design and management of human work no longer makes much sense. Yes, the current approach does yield results.

But management should be asking . . . How much better could our people's performance be if we shifted to work design and management methods enlightened by the relevant science?

Figure 2 provides a tabular illustration of what humaneering reveals to best represent the high-level architecture of human work – a job role centred work system.

The *job role* (ie, process role, position) has proven to be the most effective level for analysis of human performance and the design of work. It functions as the nexus of a work system that results in human performance. How a job role is designed will determine its output. Job roles with a large population of employees (eg, >10) or with a critical impact on performance (eg, customer-facing, P&L responsibility, rare expertise) are especially fertile opportunities for high-leverage increases in business growth and profitability.

Referring to figure 2, the Job Role Work System Architecture represents the basic structural design of the job role work system. This system includes three dominating components, each of which is itself a system whose effectiveness is determined by multiple variables. We refer to these Component Systems simply as the Work, Worker, and Work Environment, yet each includes many interdependent performance drivers. Distinguished from legacy management methods and the linear and deterministic view of human performance on which they are based, this architecture gives management a more accurate and enabling perspective of human work's emergent and systemic nature.

Figure 2 lists several examples of Potential Drivers of

Performance. The actual drivers of performance in any job role will vary based on the specific situation. Maximum performance in any job role requires a customised work system with just the right structure of performance-driving elements designed into the Work, Worker, and Work Environment component systems.

Current job roles, when redesigned with humaneering to maximise the achievement of management's objectives and include at least 20% Type 2 work, can be expected to yield improved productivity on a magnitude of 4X to 10X, within 4 to 24 months and without capital investment. This is the conclusion of host-company managers involved in the beta field tests of humaneering after witnessing firsthand humaneering's impact in their operations. (See parts 1 and 2 of this article for additional details on these field tests.)

This substantial potential is also reflected in figure 2 as a Performance Index, a concept the host-company managers helped to conceive. The figures reported as Range to Date include more than 50 job role assessments in large organisations, and involve management's input and consensus. The implied multiplicative effect of each Component System on Work System performance is still a speculative conjecture, yet has thus far proven to be a reasonable way to project the impact of underperforming Component Systems.

It has been said many times by Deming and others, and ignored just as often, that people perform in accordance with the design of the system within which they work. Humaneering's development confirms this observation, and now makes it possible for organisations to manage human work by designing job role work systems to produce the desired results. This view of job role performance makes it easier for management to realise the potential to 'dial up' human performance by redesigning a job role's work system to bring it into greater alignment with business objectives.

A case for humaneering

The time is quickly approaching, if not already upon us, when management will need to reconceive its approach for managing people and improving their productivity. Now the challenge to increasing productivity is not simply a matter of reducing the labour in products and services. It is to create more economic value from all of the people organisations employ.

Most readers will be familiar with Toyota's success during the past 70 years, much of which can be attributed to their innovation in management. Turning ordinary production workers into engaged problem solvers, they taught people with no more than a high school education about process control and statistics, provided them with the responsibility and tools, and challenged them to identify problems on the production line.

In humaneering terms, Toyota management added Type 2 (responsibility) work to a mostly Type 1 (task) job role, and in

so doing, substantially increased their workforce productivity. Still today, Toyota's employees come up with more suggestions for improvement than any other company, such that every day management gets more value from its employees than do its competitors get from theirs. (See parts 1 and 2 of this article for additional insight into Type 1 and Type 2 work.)

If we think about the human capabilities that companies have needed and rewarded in the past, they consist of the largely physical qualities of endurance, obedience, diligence and intellect required to perform Type 1 work. And as outsourcing and offshoring have demonstrated during the past 20 years, these human capabilities are now easily found by any company at commodity prices. These capabilities are still necessary, yet they are no longer sufficient to compete in today's economy. To stay ahead of competitors, companies need even more from their employees, including the uniquely human capabilities such as expertise, commitment, initiative-taking and creativity required to perform Type 2 work.

Management's challenge will be to reconsider the way work is designed and managed, because in comparison these capabilities are rare and require work conditions that are dramatically different. Management can't just direct people to be committed or creative. People have to want to be this way based on how they feel about their work, their manager, and the situation in which they work.

This presents a fundamental challenge to today's predominant Type 1 approach to the design and management of most work performed by people. Managers have all too often relied on their power to order, incentivise, and threaten people to behave a certain way. This is not as effective for Type 2 work. Essentially, managers will be challenged to create job roles and work environments that evoke from people their desire, capability, and full potential. This requires a dramatic change in how organisations design and manage human work.

But how do organisations and managers break free of legacy best practices that very soon will not be good enough? Humaneering provides a solution in much the same way that engineering provided the solution for how to design and manage industrial work a century ago. The problem then was how to turn people into programmable labour. The problem today is how to inspire and support the higher-level human capabilities of people. Henry Ford was known to lament that every time he hired "a pair of hands, he would also get a head." Now it is the head and heart that are most valuable. And they are brought to work willingly, or not at all.

Managers would do well to challenge some of their fundamental assumptions about how to best design and manage work so as to elicit each person's personal-best performance. A low-risk high-yield approach to do this is to experiment with humaneering and experience firsthand what's now possible.

About the Author

Dr James (Jim) Pepitone is the managing partner of DesignedWORK, a Dallas Texas based management consultancy that specialises in improving the productivity of people-dependent operations and serves clients across most industries and regions of the world. Dr Pepitone was instrumental in founding the nonprofit Humaneering Institute, and currently supports its humaneering field

experiments and technology transfer. His career started with ten years in industry roles, including positions as VP of sales and general manager for publicly traded companies, and continued as a management consultant. Dr Pepitone is the author of four books and numerous articles, some of which discuss humaneering as it has evolved. Connect with Jim on LinkedIn at www.linkedin.com/in/drjimpepitone/ and email him at james.pepitone@designedwork.com.