

# THE ROLE OF ARCHITECTURES IN HUMAN RESOURCES

**Jean-François Noubel**

*Researcher in Collective Intelligence  
Founder and President of TheTransitioner.org*

*www.TheTransitioner.org*

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## ABSTRACT

Architecture, when understood in the broadest sense, refers to structured spaces in which we evolve individually and collectively. These spaces can be easily accessible to our senses (building architecture, space occupation), or partially perceived (language, money, social conventions, time...). In the first case we will refer to *visible architectures*, in the second case we will refer to *invisible architectures*.

These architectures are so present and pervasive that people are usually not aware of them and take them as the external reality that has always, and will always, shape the world.

We demonstrate that architecture plays a central role in collective intelligence, wisdom and consciousness (CIWC). Similar architectures will trigger similar collective outcomes no matter what topics, issues, market places and players are in its center. Different architecture may empower or diminish the capability of a community to deal with these given topics, issues, market places, players. Architectures not only influence our capabilities, but they create new reality.

The planetary challenges facing humanity today are intimately related to the architectures with which they are formulated. In new architectures a given challenge may be perceived and addressed totally differently, at individual and collective levels. In some cases the challenge may not even exist anymore, it was just a byproduct of the architecture.

The civilization of pyramidal collective intelligence has invented specific architectures for itself. Some are highly influenced by culture and local factors, others seem to be universal. Today any learning organization seeking to improve its collective intelligence, wisdom and consciousness should become highly aware of the way architectures operate, especially inside the different types of collective intelligence. People can be trained to detect which architectures are surrounding them. They can then decide to design new ones that can empower them. They become architects rather than just being “architected”.

Architectures are a keystone in collective intelligence and a new area to explore for human resources.



## I. INTRODUCTION

Collective intelligence (CI) is a new discipline<sup>1</sup>. Its aim is to observe and describe how social species operate as wholes, how they interact with one another and what evolution is creating on Earth for the future. Although social species are not necessarily humans, we will mainly focus on what humanity has invented for itself in the past, and what is likely to manifest in the near future. It triggers intrinsic limitations that all human organizations<sup>a</sup> are facing today, which becomes at the same time an invitation to evolve.

Empirical observation and theorization in CI requires new definitions in order to build new concepts, maps and dynamic descriptions. Most of the language used in CI comes from complex systems thinking and life sciences.

Collective intelligence would remain a dry field if it came alone. In order to give life to it we need to open it to wisdom and consciousness. Hence we will refer to Collective Intelligence, Wisdom and Consciousness (CIWC). This opens a much wilder field that includes philosophy, psychology, cognitive sciences, metaphysics and spiritual traditions, to name a few. Even more: it becomes a pragmatic and practical way for pioneer organizations to *be* this evolutionary edge rather than just describe and analyze it from an external intellectual point of view. CIWC is definitely a self-generating discipline to create a new reality.

We start with some key definitions. From there we will be able to explore how architecture shapes reality in the collective, and how learning organizations can empower themselves by becoming their own architects.

### A. A definition of collective intelligence

Let's begin with a general definition of collective intelligence:

**Collective Intelligence is the capacity for a group of individuals to desire a future and reach it in a complex context.**

Individuals can be humans or any other living form. The group may be small (a few individual) or be an entire societies with millions – if not billions – of individuals.

*Desiring a future* means that individuals build a collective anticipation of the future they need or desire. A group of wolfs hunting a prey, a village of farmers preparing the next crop, a country building its politics for the next generations, an ant colony attacking another colony, a sports team willing to win the game... each are projecting a future in their own way, by reaction or by creation. Human societies mostly operate around symbolic objects (projects, objectives, income, etc) while animal life operates around material objects (catch the prey, run away from predator, attract a partner, protect the baby...), but there is no fundamental difference in the dynamics.

*Reaching a future in complex context* means that nothing is played in a deterministic environment. Adaptation, learning and problem solving are required from the collective. Some environments can be highly stable and predictable, others are so unpredictable that they require of a community the capacity to change its deepest structure and architectures, in other words a capacity to mutate.

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a By “organization” we mean any group of human individuals, small or large, open or closed, formal or informal: company, government, sports team, NGO, administration, army, a protest mob in the streets (swarm...), etc.

## B. Different kinds of collective intelligence

We distinguish four main categories of collective intelligence.

**The Original Collective intelligence (OCI)**, is where humans come from. Examples in animal life: big cats, dogs and wolves, dolphins, most social mammals. In human contexts: a sports team, a squad, a task force, a board, a family... OCI operates in small groups of highly differentiated individuals. Each individual has a perception of the whole and a dynamic relationship with it (see *holopticism* below). The two limits of OCI are the number of participants, and the physical distance between them.

**The Swarm Collective Intelligence (SCI)** is seen in insect societies, schools of fishes, flocks of birds, herds of mammals... when a high number of individuals are playing together. In the SCI context individual actions are mostly influenced by the immediate neighbors and environment, with no or partial perception of the whole. The swarm collective intelligence is an emerging property of thousands or millions of individual partially “blind” interactions.

**The Pyramidal Collective intelligence (PCI)** is structured around hierarchies and role specialization. PCI allows the coordination of large numbers of individuals around shared complex goals through asymmetrical relationships along a chain of command. Capacities to operate in the symbolic plane are required, this is why primitive forms of PCI are seen only among evolved animals, most likely mammals (apes, wolves, dolphins, elephants...). PCI is highly developed in humankind since the invention of the writing (symbol circulating in time and space). Today almost 100% of large human organizations belong to the PCI category: companies, governments, administrations, churches, armies, NGOs... Among its complex characteristics: authority, labor division, standards and norms, and a set of scarce resources. Scarce resources are used as catalysts for building and maintaining hierarchies. In most cases the scarce resource is the monetary system itself<sup>b</sup>.

**The global collective intelligence (GCI)** is the emerging new social species making its baby steps in humanity today. It integrates all properties of the OCI and some of the PCI, plus new properties that have never been seen before. GCI is composed of any number of participants, from a few to millions, local or global, operating with a sense of the whole. GCI relies on socialware, i.e. software in cyberspace used by communities to self-manage themselves, to embrace inner and outer complexity, to synchronize its being and doing, and to be in systemic interoperability with the rest of the world.

These four categories are not fully separated. The three first ones may apply to a same species in different circumstances. Only GCI seems to be specific to humanity. Humans are definitely capable of using any of these collective intelligences.

Each of these collective intelligence categories have their strength and weaknesses, qualities and limitations. The aim of this paper is not to discuss them in detail<sup>2</sup>. Let's just mention that today PCI seems to be reaching its limits, which also creates the incentive for GCI to emerge. Most of the major challenges that humanity is facing today are because it has not yet invented social species capable of avoiding those outcomes. Current challenges are the byproducts of millions of PCI organizations bumping into their *intrinsic limitations*. It is a deep epistemological mistake to stigmatize the bad leaders, the incompetent politicians or corrupted administrations as the exclusive cause of social pain. Replace them by competent, honest and well intentioned leaders and the situation will improve slightly but the outcomes will remain the same, because the social species and their *architectures* remain the same. Same architecture, same outcome.

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b Contrarily to a common belief, money doesn't have to be scarce to have value. There are other types of currency systems that offer sufficiency and don't catalyze hierarchies.

## C. Holopticism: a central question in collective intelligence

*Holopticism* is the capacity for an individual to access, perceive and co-build the emerging whole of the group. It is when the individual and the whole are operating together. A sports team evolves in a holoptical context because each player has a clear sense of where his team –and the other team– are at. Even more, importantly, the quality of a player doesn't not exclusively come from his individual technical skills, but also from his capacity to perceive the whole and act accordingly.

Holopticism is naturally present in small groups of individuals playing together, in the context of original collective intelligence (OCI). Holopticism degrades when the number of participants is increasing, and/or when more distance exists between them. A large group may perfectly maintain *transparency* (everyone sees each other) but lose *holopticism*, because the brain cannot process this level of complexity. In such a case another social strategy needs to be found: either swarm, pyramidal or collective intelligences seem to be what nature –and consciousness– have invented so far.

One of the limitations of PCI and SCI is that the holoptical context has been lost, the individual has to operate in some blind way without any feedback from the whole. Only global collective intelligence (GCI) seems to be offering artificial holopticism through socialware.

Let's notice that humans are always attracted by holopticism, and more generally OCI. Our natural body technology has been designed for it. This is why organizations have meeting rooms, and why people take planes to cross the planet and attend a meeting.

## D. Collective intelligence, wisdom and consciousness (CIWC)

**Collective intelligence** refers to the external, methodological and operational aspects of social organizations.

**Collective wisdom** is the access to and the manifestation of wisdom, at a collective level. A group of wise individuals doesn't necessarily know how to behave wisely together as a collective, because of a lack of collective intelligence. Collective intelligence is a necessary (but not exclusive) condition for collective wisdom to emerge. Let's also note that *wisdom* is not just a set of ethical rules or “good” behaviors, but a state of consciousness from which a sense of directions and rightness of actions is obtained, beyond mental reasoning. It involves a surrendering to what is *true, good, beautiful*<sup>3</sup>.

**Collective consciousness** is the sense of each participant as being part of the group consciousness. Just like wisdom, this is a direct experience. It can be accessed anytime in order to sense what the context is and what is willing to emerge from the “center” of the collective. Three key conditions are necessary for collective consciousness to manifest: shared wealth (qualities of each one, current assets, etc), shared vulnerability (humanness in the other, inviting for mutual support and wealth sharing), and shared language (for understanding each other).

## II. ARCHITECTURES

Architecture, when understood in the broadest sense, refers to structured spaces in which we evolve individually and collectively. These spaces can be easily accessible to our senses (building architecture, space occupation), or partially perceived (language, money, social conventions, time...). In the first case we will refer to *visible architectures* and in the second case we will refer to *invisible architectures*. We will use *architectures* in plural to refer to this broadest sense, while *architecture* usually refers to building

architecture.

Architectures are so present and pervasive that people are usually not aware of them and take them as the external reality that has always and will always shape the world.

Architectures play a central role in CIWC. The same architecture is likely to trigger the same collective outcomes no matter what topics, challenges, market places and players are in its center. A different architecture may empower or diminish the capability of a community to deal with these given topics, challenges, market places, players. Architectures not only influence our capabilities, but they create new reality.

## **A. Visible architectures**

The easiest, most intuitive and pragmatic way to understand what architectures do is via visible architectures. They consist in any structures that we can directly perceive in their wholeness with our biological senses (view, touch, smell, hearing...). Building architecture, or simply “architecture” is the most obvious one. It is the very science of designing physical spaces for specific individual and collective outcomes. A train station, a factory, an office, a stadium, a city hall, a house, a jail, a hospital, a school are everyday examples.

The same group of people will experience different individual and collective outcomes depending on which architecture it operates in: an open space, an auditorium, a jail, a train, a beach, a restaurant, a street, a meeting room... Same people, same group, but different outcomes depending on the architecture. This is the very *raison d'être* of architecture, it does place people into specific space and relational configurations with one another, liberating certain possibilities and diminishing others.

We can easily check from our personal stories how architecture itself can generate issues whereas most participants may take these issues as being totally external and having an existence by themselves. Architecture is not questioned, the issue becomes an object in itself, a part of “external reality” to deal with. The role of architecture as the catalyst of this problem is forgotten.

For instance in a company where departments are separated by floors, it is not unusual to see rivalries between people because they evolve in completely differentiated spaces and realities. This situation might be experienced as an intrinsic problem of communication between services without questioning the building architecture itself. Another example in big meetings and conventions, where the most precious moments are not necessarily the ones with the speaker on stage, but those in the hallway where people can form whatever patterns and configurations they need. Experienced organizers will try to provide a balanced combination of different physical architectures for people to meet and interact in different manners (amphitheater, hallways and coffee breaks, restaurant, outdoor attractions, etc).

Other examples of visible architectures are: acoustics, light, food, natural environment, clothing, etc, each easily perceptible by our biological senses.

Visible architectures may seem to have an obvious role in catalyzing individual and collective outcomes. It becomes more complex and tricky when it comes to *invisible architectures*.

## **B. Invisible architectures**

Invisible architectures are more challenging to grasp because they operate mostly in the symbolic world of

the mental plane, in a more or less direct manner. Their role is as important, if not more important in many cases, than the visible architectures.

Examples of invisible architectures are: language, money, social behavior, time, cultural beliefs, legal systems... Let's take a quick look at the three first ones.

## Language

Language is not just descriptive, it is also generative. Discriminative words shape reality. Sometimes, if a word (i.e. the category of reality it represents) is not appropriate anymore, then people keep trapped in old world views. Sometimes new distinctions are missing, conflicts begin because of the many different understandings and world views around one same concept.

Let's take the concept *human resources* (HR) for instance. This term expresses a paradigm and a world view in and of itself. Humans are seen as commodities that contain intrinsic properties (knowledge, skills, education...) that will be used as *resources* to achieve a given goal in an utilitarian context. This concept leaves little space for emergence (what can emerge from a given group), collective intelligence and invisible architectures, sacredness and unpredictability of life. Some advocate the use of the term *social capital*, in order to shift to another paradigm<sup>4</sup>.

Grammar plays a key role too. Most of the bridge between the external world (doing, action, the objects 'out there') and the inner world (being, inner feelings, the subject inside) are bridged through grammar. Change the grammar structure, and the whole reality shifts into another one. In other words consciousness shifts.

Here is an example in most western languages. Michelle says: "*Allan's words hurt me*". The grammatical structure suggests the words pronounced by Allan have an intrinsic property of creating pain. In such language architecture Michelle is not encouraged to realize that she is creating the pain for herself through the relationship she has with those words. Hence she is not invited to step into her sovereignty to decide about her relationship with those words. It would take quite some discipline and complex paths for Michelle to express "*I have created some pain for myself after Allan said these words*". For now Michelle has used ordinary language with ordinary grammatical structure. She steps in ordinary consciousness of the current society she lives in, no language architecture invites her in a more empowering space about herself unless she decides to take that journey for herself.

## Money

Money is probably the most difficult invisible architecture to understand, and the most powerful at the same time<sup>c</sup>, because money is present in most transactions, pervasive and planetary (whereas language still has enough diversity to help us realize other potentials in other cultures).

The global monetary system used in our epoch has been shaped during Victorian age and refined during industrial and information age. Although money has turned into digital form, its fundamental dynamics remains the same. Its built-in architecture based on artificial scarcity, ownership, centralized control, interest, creates an incentive for humanity to behave accordingly with these properties. Scarcity and rarefaction, ownership and proprietarization, centralization and control, profit making and short-termism are natural outcomes of this seed monetary architecture<sup>5</sup>. With the

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c "The Future of Money", Bernard Lietaer (2001)

arousal of free/open source economy in the just born GCI context, new monetary systems that will support its development are likely to emerge and become global in the next years<sup>d</sup>.

## **Social behavior**

Social behavior has been designed through decades and generations of social interactions, for quite practical purposes. Social behavior serves the needs of a given society in a given culture. Just like language and other invisible architectures, social behavior shows how people relate to one another, what relationships between men and women are, how casts are designed, how power is organized, it expresses how agreements are made, what is the relationship with God, death, life, and what is the place of the individual in regards to the collective.

Changing any of the architectures we just partially described does shift reality. Let's now see a practical example of a non-conventional architecture that can be used instead of the ordinary one.

## **C. Example: another social architecture in conversations**

The way conversations are engaged and nurtured obeys a complex set of behavioral rules learned during childhood. They become so natural and embodied in the deep structures of the being that they are perceived as part of the natural world "out there". As seen earlier the way conversations are held in a given society and culture does express the ordinary level of consciousness and access to reality of this community.

When a group of people (community, company, government, whatever organization) is willing to shift to deeper consciousness, then it needs to explore other ways to engage and manage conversations. Ordinary conversation will keep reproducing the conventional world. Architectures that invite participants to step into higher/deeper consciousness, individually and collectively, have to be sought.

In the following example we propose **6 conversational agreements**. They have been tested and applied in many contexts, societies and organizations. Large organizations have adopted and adapted them for their meetings, and discovered that many issues they were dealing with in the past have simply... disappeared. These agreements are not an innovation, they are inspired from wisdom traditions that have used similar behavioral architectures for millenniums in order to let wisdom manifest and be explicitly spoken<sup>e</sup>.

### **THE 6 AGREEMENTS :**

#### **Agreement 1: a long full breath before speaking**

This breath has many virtues. First, it acknowledges the person who just spoke before by showing him/her that what has been said is deeply listened and 'breathed in'. Second, it gives participants enough time to journal their own inner process, more specifically those that are not mental (physical, emotional, higher consciousness...). Third, it helps participants to relax and let go, at the physical and emotional level, and then at higher planes of the being. They can then surrender to what is willing to emerge from the group and enjoy the richness of it. Four, it helps participants move from a reacting mode (responding, taking the floor)

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d '*Open money*' is likely the most advanced project that goes in this direction. Check <http://openmoney.info>

e The Quaker community has been quite successfully using similar agreements for centuries. Check <http://www.qis.net/~daruma/business.html#Overview>

towards a creative/generative mode (offering the floor, enjoying the emerging collective intelligence of the group...).

### **Agreement 2: speak to the center**

Speaking to the center (physical center of a group in circle, or imaginary center) rather than to particular people allows the emergence of the whole because participants decide to give birth to it. Participants are asked not to engage sub-group conversations in the midst of the collective process. Side conversations can take place in other spaces. Speaking to the center also invites participants to step in impersonal mode, become witnesses of themselves and the group, invite the inner observer and facilitate the process of inner peace and stillness. It shifts the whole dynamics of the group into a depolarized context.

### **Agreement 3: listen to the center**

Listening to what is willing to manifest from the heart of the group and voicing it also contributes the emergence of the whole. It requires a deep listening mode and to open all levels of the being: vital, emotional, mental, higher consciousness... Although speaking and listening to the center may look a little artificial in the first place, practice shows the amazing increase of the group's creativity and freedom.

### **Agreement 4: speak from personal experience**

Sharing personal experience rather than general theories invites boldness, vulnerability<sup>f</sup>, trust and compassionate relationships. General theories and assessments about the world are external objects that don't implicate much the person who speaks, just like if they were external facts. Not only does the person who speaks get separated from his/her original experience, but it places a screen between him/her and the others. A person about to speak is invited to check whether what is about to be said is a true generality, or if it hides a personal story. In the latter case personal story is preferred. Stories have the virtues of myths: they carry emotions, multilevel life experiences, cosmologies, vibrations... A much richer material for a group to deal with.

### **Agreement 5: don't take the floor, have it offered**

Because time is a scarce shared resource, participants are invited to use it cautiously and moderately. Notice that in groups where people interrupt one another or respond without leaving space, time is used the same way a prey is being cut up in archaic life: the strongest, the most agile, the fastest, the craftiest gets the better share. In such cases it is the vital plane of biological urges and survival that is the driving force. This remains true even when people are sharing sophisticated concepts: the mental is fast when being driven by the vital. It takes at least a long breath for participants to journal every plane of their being, offer time for profundity, higher consciousness, diversity of views, exploring the frontiers of what is known, i.e. leaving the comfort zone. Having the floor offered is like being seating around a table, with dishes being kindly served and shared. It creates a entirely new dynamics.

### **Agreement 6: invite silence when necessary**

At any moment a participant can ask for silence, either because some of the agreements are broken by some participants without them realizing it (old habits usually come back fast), or because the person asking for silence just needs it for personal reasons. Then the conversation is immediately suspended, people enter into silence for one minute. It offers them the space to explore the current context in a deeper level, journal what just happened, explore their emotions, needs, sense of emergence in the group, etc. Once the minute is over the person who asked for silence is free to explain why he/she did so. Not giving the reasons is perfectly valid and shouldn't be understood by the participants as a way to stop the conversation. The conversation can then resume. It will often start with a new dimension.

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<sup>f</sup> Vulnerability should not be confused with weakness (many men don't make the differentiation). Vulnerability is the capacity to open, trust and let go defense mechanisms.

## D. How to design the right architecture?

What are the best architectures and combinations of architectures that generate empowerment in a given context? No architecture is better than another. The aim is to create empowerment. For instance the 6 agreements above would not be empowering in a brainstorm session, and inadequate to comment on a sports match.

The pragmatic methodology consists in two steps:

1. **Track and hunt whatever architectures are at play.** Invisible architectures reveal themselves through anecdotal moments of everyday life, one detail may lead to a whole pattern. Here is an example: in a company everyone agrees that an obvious action should be taken to solve a known problem, but it never happens. There is always something that delays or short-circuits that action. A deeper analysis may reveal that although the action to take is *obvious* at the mental plane, other planes of the being don't have the same relationship with this action. The action may be simply boring, or triggering deep unspoken fears, or repeating an old pattern of failure. This is a typical situation where ordinary architecture (decision making, meetings, processes, mental schemes...) is disempowering.

Visible architectures are easy to track but shouldn't be underestimated too. They are often reproduced mechanically because of cultural habits that makes them somewhat invisible. For instance people often use the same room configuration without checking whether this configuration serves the purpose of the current meeting.

2. **Become an architect, rather than being architected.** Once an architecture has revealed its secrets and outcomes, one may wonder if it is empowering enough or if it should be improved. Should participants be forming another pattern in the room? Is there a better way to improve listening? What social architecture would enhance trust? What space architecture would catalyze creativity? What currency would support knowledge sharing? Etc.

In the previous example of the situation faced by a company, ordinary corporate architecture should be replaced by an empowering one. The group must be invited into a space where all planes of the being (vital, emotional, mental, higher consciousness) can be freely expressed in order to hear what each plane has to express, and to harmonize them. The ordinary corporate architecture doesn't allow this; a new social and behavioral architecture is necessary.

As we see it is never about one single architecture, but many architectures playing together in different planes (physical, emotional, mental, higher consciousness...) and contexts (individualistic, social, small group, creativity, conflicts, market place, project oriented, etc). Experimental, empirical and pragmatic approach is advised.

## III. CONCLUSION

We have seen that a given challenge or issue faced by an organization in many cases might just be a byproduct of some pervasive – and often invisible – architecture. Change the architecture and new reality unfolds. One of the traits of architecture is that it creates an illusion of safe ground. It often takes some crisis –even big earthquakes– to realize it, that there is no safe ground, only intentions to clarify, explore and support with appropriate empowering architectures. This challenges our resistance to change and natural

## BIBLIOGRAPHY AND LINKS

attachment to forms.

One may think the architectures approach is another way to talk about “paradigm shifts”. Paradigms mainly refer to a mental framework, a belief or thought system<sup>6</sup>. Architectures invite us to much broader shifts because they open (or close) and trigger (or put asleep) each plane of our being – vital, emotional, higher consciousness– and not just the mental. We believe that organizations and people of this millennium will have to reconnect to all planes of the being and let them openly operate into the social field.

Original collective intelligence used to suffice when humanity was still mostly tribes and villages. The entire body technologies created by evolution were at play in the social arena. Emotional intelligence, shamanism, deep sensory capacities, mystic connection with the land and the universe, body expression as a full and rich language, myth, art as ways to express other planes of consciousness, etc, were part of the collective. This can still easily be observed in Primal Peoples.

The past 7,000 years of pyramidal collective intelligence that took off with the invention of the writing, has somewhat “deactivated” many of the original planes to emphasize the power of the mental. The latter became highly developed while other capacities and planes have been left aside or seen as secondary. The emphasis of the mental has brought us to the point where reality is confused with concepts and mental mappings. Maps have replaced the land. This is powerful in many cases, but insufficient to address today's challenges.

The intrinsic limitations of PCI triggers today the quest for a broader consciousness that necessarily comes with a wider capacity to act collectively, locally and globally. This challenges the question of “human resources” at all levels. OCI is powerful because all planes of the being are reintroduced, but limited in space and distance. There is no way humanity can return to tribal organizations and villages. Global collective intelligence seems to be the next emerging form. It *transcends* and *includes* previous forms, and opens the paths to new possibilities. Humans involved in these early GCI organizations are asked to be *in their body* in the physical reality, *connected to higher consciousness* in the trans-subjective reality, and expressing themselves via their new *digital self* through cyberspace in the new emerging social reality<sup>8</sup>. They have to be spiritually developed, socially mature, globally aware, and systemic in their thinking.

This evolution is socially measurable and observable everywhere on the planet, with the emergence of Cultural Creatives<sup>7</sup>.

Pioneering collective intelligence, wisdom and consciousness, and designing new architectures seems to be an unavoidable path, way beyond the human resources question. Integral human beings connected to one another through their original “technology” -- the body – and fiber optics – the web... It looks like Aborigines are back, but this time they won't just walk on the land and in Dreamtime, they will also walk on the web.

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<sup>g</sup> People who are not familiar enough with the web or those who see it with the eyes of PCI usually take it as a *virtual* place by opposition to *reality*, i.e. *their* reality

- 1 “Collective Intelligence: the invisible revolution”, Jean-François Noubel (2004) – <http://TheTransitioner.org/ci>
- 2 Check <http://TheTransitioner.org> for more information
- 3 “Sex, Ecology, Spirituality”, Ken Wilber (2001)
- 4 Wikipedia: [http://en.wikipedia.org/wiki/Human\\_resources](http://en.wikipedia.org/wiki/Human_resources)
- 5 “Our future economy: money and sustainability – the missing link”, Bernard Lietaer, Stefan Brunnhuber – to be published in 2008 by the Club of Rome.
- 6 “The Structure of Scientific Revolutions”, Thomas Khun (1962)
- 7 “The Cultural Creatives: How 50 Million People Are Changing the World”, Paul Ray and Sherry Anderson (2000)