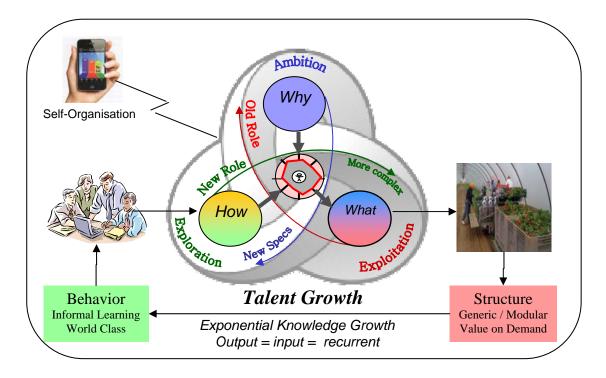# Collin concept

*The actor-approach excellerates workplace learning
on the job. People learn to manage and innovate
themselves to be ready for the future and
be sustainable embloyable from role to
role and from work to work*

FAQ-Collin, document COL.1.0.2

What is Collin?

Collin is the brand name for Methodical Innovate (see www.academi-io.nl). Collin has roots in the science and in practice. The founder of the method is Theo Lohman, a Dutch engineer from Delft. He wondered why a very complex industrial project in the eighties, with a hundred of employees involved, could be realized successfully in one time right, without using detailed schedules.

Collin is the result of accumulated knowledge about how people learn, share knowledge and collaborate. And about why people do the things they do and
what ways are to effective solutions. Best practices, successful innovations and key knowledge from science are used as sources. The new and contemporary knowledge about the functioning of our brain is the most important source for Collin.

All that knowledge has Theo Lohman for many years in a process of work and exams - with the assistance of Jan Hak, Wim Gielingh and many experts - tested, recorded and made accessible. For example, there is knowledge and there are training and curricula designed for the pleasure of Collin step by step to make accessible.

The method has three types of models for knowledge creation, reflection and action. The linking of the three models is the intrinsic motivation to learn. The method is (international) scientific validated and evidence based by applications in industry and education. Currently, Collin also is applied in other areas with complex learning tasks such as the care, finance and public sector.

Why do we need Collin?

This is why. And to be more specific:
- Because we walk from one crisis to the other, and the running of a business is more difficult than ever; not or poorly paying customers, there is uncertainty about suppliers, collaborations that do not walk, human schedules that do not connect and staff with insufficient or not the right skills and knowledge.
- We cannot solve the problems of tomorrow with the knowledge of yesterday.
- Because there has never been so much knowledge to use, within and outside the door, but it too often a question is how to make this successful.
- Because we need the knowledge of each other, from different disciplines, from more sectors increasingly at a time to realise 'world class' performance to contribute to the solutions to major issues such as food security, enough clean water, adequate care and a stable climate.

And also:
- Because we prefer to work from our own intrinsic motivation. We want to be addressed on autonomy, competence and interpretation of who we are and what we do
- Because employees who want to continue to do so in their current job and in future functions
- Because you want to feel and know that you are always ready for a next job

What offers Collin us concrete?

- The complexity of major issues to be able to use more organization is needed. Collin helps by learning:
    - o How to structure knowledge,
    - o by learning in teams to support, and
    - o To discover how new solutions and other changes arise in a process of knowledge creation. Collin breaks the innovation paradox: you can learn to innovate!
- Collin has discovered the natural knowledge cycle again. By the separation of our work-, target and development systems the company became static. Thanks thoroughly thinking, understanding of the functioning of our brain and so-called semantic software, you can with Collin repair the connections between the three types of knowledge (why, what, and how) in the knowledge cycle, in business and education, in sectors and chains.
- Collin developed some models to do this
    - o A 'actormodel' that integrates the three knowledge types Why, How and What, and
    - o Three practical tools for connecting work and talents: a compass, a map and a metrics,
    - o To discover how the company can tackle problems and be prepared for opportunities
- Collin's map of the work is the ideal tool to design roles clearly and identify gaps and weaknesses in the way visible; for the first time the dialog about work happens in a pleasant and transparent way. Together with Collin is it possible to create a future oriented plan to survive in dynamic markets.
- To learn how to innovate, Collin offers then trainers, teach, trained colleagues and app's, in short, a tool box with intelligent instruments

And also
- A safe environment on the web to share knowledge and to create, under more by the use of templates for tasks and activities
- The opportunity to step-by-step to discover how you can work smarter in team to complex issues
- All luggage to a successful innovation to address and to conclude with a resounding performance

What does Collin on?

- A gear of the knowledge productivity in organizations with a factor of 3 to 5, and executive development in the depth and width
- Work and talents who better fits to each other
- Adaptive teams with new knowledge that for all the parties involved is available online and can be used to renew and innovate
- Views of World Class Performance'
- Shared knowledge which is maintained within the company
- Better mutual coöperator
- Insightful and smooth current work processes
- Improvement of the workplace
- Collective leadership
- An approach which is all about the people who do and to the customers for whom they do it
- A company which at the time is still in good time and in a position to innovate
- A universal language for innovation,

- Cycles within companies, between companies in a sector, between sectors and education, in chains and in regions
- New opportunities for international cooperation and trade

How to implement?

- The first introduction to Collin takes a half-day
- The next step is a two days workshop, to enable people discover the power of Collin as a new paradigm to make the organisation learning and enable self-innovation on the Job.
- The third step in an innovation traject with a lead time of 6 months. In this traject the company realizes real innovations on the job. People grow in competences and knew knowledge is created. The instruction is only ten workshop days. The in-house innovation manager uses the instructions for in-house learning in teams on the job, supported by e-innovation system.
- The training of internal trainers and the use of the tool of Collin apply generally well within the regular budget for training and development. This is because of Jennings 10-20-70 formula, which means that the 70 percent of the people costs are now real costs but leads to innovation productivity on the job, which are in essence benefits.

How is Collin Worldwide introduced?

- Like only people can do so: with heart and head, and emphatic Brainlike
- With a name that covers the cargo: Collin, derived from 'collective intelligence', because we do together on the smartest way
- Collin is part of the team, the one time as an operator and then as operant
- No man is perfect. Nor is Collin. He is open to criticism and would also itself always learning
- Collin is introduced through its network of friends who have discovered him and his method (Theo Lohman, Jan Hak, Harm Rozie, Hans Veeke, scientists, consultants, teachers, Italian trade unionists, entrepreneurs, trend watchers, at home and abroad)
- Collin makes use of the web to grow quickly
- The introduction we do on the basis of the experiences of some current examples.
- The friends of Collin ask their friends and relations to Collin to propose within their network and so on
- Around Collin we develop a social network to share knowledge and to develop
- Collin is a guest of those who want to do that, in sessions, virtual during the work and on the go using the Smartphone or ipad
- Collin can also host for meetings, conferences and congresses, and who knows, a Collin University

Summary

Collin is the intelligent colleague or friend that we would all like to have or to be. He offers a binding method in the least time, at the lowest cost to achieve the largest knowledge productivity.

Collin takes you back to the base, if things seem to be too complex, if you start a new discovery journey. 'How would you do it?' is the key question to hidden knowledge for to find new solutions. World Class Performance reaches with fun in the work, that is the question.

Collin helps in a natural way to learn talents and develop knowledge. Collin is the contraction of collective intelligence, and status for emphatics together. Collin offers a new way to work on brainpower. That does Collin with training, coaching and app's.

The secret of Collin is that the method of the natural process of our brain. Learn and develop, and also work together and take action, are becoming increasingly easier for whom Collin works. Conversely, Collin a binding language, esperanto for innovation, cooperation and trade between people in companies and institutions, education and science.

Collin is a person that you like to your friends and colleagues propose. [1]

References

Collin is developed in cooperation with:
- University Delft   Delft Systems approach
- University Brussels   Evolution, Complexity and Cognition
- Universiteit Utrecht   Learning and education
- Universiteit Maastricht   Curricula development
- Hogeschool Utrecht   Bachelor and Master Integrated Design
- HAN, Fontys, InHolland   Minor Methodic Innovation

Collin required a transdisciplinair approach and is based on the integration of fundamentals from several pioneers and is developed on the job with industry.

- J. Bach   Psi cognitive model, emotion, motivation
- D.J. Fuller   Dynamic structuring; crystals evolution
- B. van Cranenburg   Systemic approach on Brain Physiology
- P.H. Damste   Concentric Man; Biologic Law of evolution
- D. Dörner   Quad network; Creation of structures
- P. Drucker   Integration of Work and Worker
- W. Gielingh   Garm Object Ontology for PDI in industry
- E. von Goldammer   Heterarchic and more Valued Logic
- J.P. Guilford   3D Intelligence Frame Work, Creativity
- F. Heyligen   Meta System Transition Theory
- L. Kaufmann   Fundaments of the Trefoil Knot-theory
- H. van den Kroonenberg   Methodic Design, Creation Logic
- P. Malotaux   Integration of Work and Worker
- T. Mitchell   Ontology on AI-learning strategies
- J. van Merrienboer   4D model for instruction of complex tasks
- S. Nijssen   Semantics based on Natural Language
- R. Sternberg   Triarchic model on behaviour
- R. Rosen   Relational Biology; Holistic Approach
- H. Veeke   System Approach over the lifecycle
- J. in 't Veld   Universal Steady Statemodel

A more detailed list of 300 literature references will become available in the next paper.
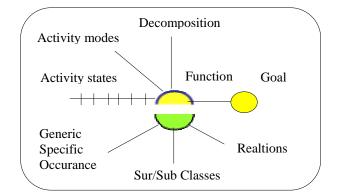
Transformative Research

Reflection on the Psi Architecture (Principles of Synthetic Intelligence p.238, Dorner)

It was pleasing to find out that your concepts on Creationlogic (your Quad, our Collin) compliments each other. The architectural model of Psi and Collin seemed to be similar. Psi focuses more on the visualisation and simulation of motivation and the emotion aspects. Collin focuses more on the visualisation and development of cognitive and meta-cognitive competences to beat complexity.

The roots of Collin refer to the World of building complex systems in industry. The roots of Psi refers to the world of cognitive psychology; the development of subjects in social systems (Cognition, Motivation, Emotion). We discussed the possible synergy by connecting the two Worlds, using the actormodel (Trias) as an integrator.

Creation Ontology / Quad model (Die Mechanik des Seelenwagens p.45)

One essential similarity concerns the concept of knowledge creation. Psi uses the QUAD-concept (network of 5 neurons) to create goal-oriented flexible structures in neural Networks. Collin uses the extended Garm (ISO-standard ontology) to create goal-oriented flexible structures in social Networks. A second similarity concerns the concept of retrieval, matching and reuse of existing knowledge. Both concepts Psi, Garm are parameter value driven and enable the information flow between sub and super structures. This concept is worked out in a Dutch Industry Standard for Knowledge Engineering and competences (NEN NTA 8611 and NEN NPR 6074).

Heterarchical structures (see also Goertzel, the Hidden Pattern 2006, p.158)

This subject is extensive described by Felix Klix (1971) and explored by Dörner. It has to do with analogical reasoning (syllogism). This concept is operational in the Dutch industry to find articles in big databases by classification of components, their attributes and values to find components out of 100.000 article databases. This principle is based on parameter value flows. Dörner uses this concept to create flexible knowledge structures (Quad concept / 4 Aristotoles Questions).
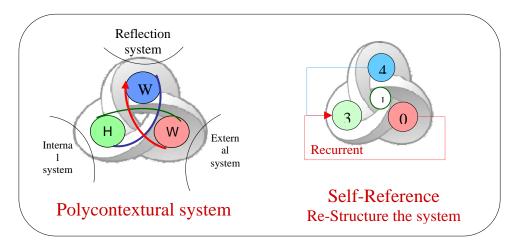
Actormodel / Brainlike learn to innovate (Goldammer / Sternberg 2000, p.42 / Kauffman)

Intelligence serves three functions in real world contexts;
1. Shaping of environments, people's change their environment to suit themselves (What)
2. Adaption to the environment, people's changing of themselves in order to suit the environment in which the live (How)
3. Selection of environments, people's choosing new environments when the are unable to make their environment work for them (Why)
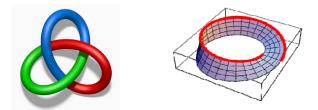
These three worlds' works together and cannot function without each other. This approach will people enable to better understand their own work (Object/what/red), to innovate them-selves on the job (Subject/How/gGreen) and to Self-reflect on their motivation (Ambition/Why/Blue).

Polycontextural system
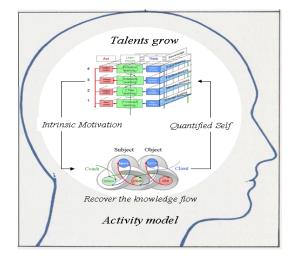
Self-Reference
Re-Structure the system

The three worlds have to co-innovate to realise a step-function (Bateson). In this innovation mode (mode 3) there is the problem of simultaneously and parallel processing of information which can not be handled with the classic logic. Automation requires Multi-valued logic (Goldammer / Kaehr).

The three elements are organized in such a way that each element dominates only one of the three others and is subordinated to the other two elements. At the same time the elements agree end disagree with each other. Each element has benefit by the survival of the whole. This boundary control function is expressed by the Mobius strip. A non–transitive dominance chain in a Trefoil Knot (Houten 1982 UA, Jones 1997 mobius transformations, Kauffman 1994 3-Manifolds.

Collin: Collective Intelligence model (Guilford)

Mind functions are intrinsic coupled on activities and two complementary elements (WHO-ICF standard) . This rejects the traditional assumption of dualism (Matter and Mind). By making the talents explicit and measurable (Quantified Self) people becomes intrinsic motivated to start learning again. The model is based on the Intelligence model of Guilford. His Problem Solving Model (creative talents 1986) has been very useful to better understand convergent and divergent thinking and helps Education in the development of Self-Constructivism (Constructivist AI-system;Goertzel 2012, p.158).

Reflection model

Around 1980 TUDelft (Prof in 't Veld, College of Malotaux) started developing a universal S*teady State Model*. This cybernetic model gives insight in 1e and 2e order behaviour of organisations. Later on this model is extended with semantic and learning tasks. This enabled actors to discuss about the quality of information and knowledge as input for overall Performance. Cognition became intrinsic part of Cybernetic systems.
Last ten years steady state model (deductive thinking) is extended with 3e and 4e order reflection levels to promote inductive thinking. Inspired by the Cubic model of Guilford we completed the model with a third dimension: levels of learning (Bloom e.o.). This third dimension makes learning strategies and self-instruction debatable. The reflection model is called *Collin*, from Collective Intelligence (figure 3).

Intrinsic motivation

P. Drucker (1999) and P. Malotaux spoke about a known unknown: the interaction between behaviour (actions) and internal structure (talents). To make it possible to match talent and actions with each other, a toolbox has been developed consisting of a compass (based on Collin) a land map (based on the steady state model) and a Performance scale (based on the CMMI-standard). The toolbox enables actors to improve their own talents (Quantified Self) in learning teams on the job by applying a third order learning strategy (Nonaka). By making the knowledge explicit, modular and collective available with semantic tools the collective intelligence of the organization starts growing. Actors become intrinsically motivated to start informal learning. This has been proved in practice with 30 SME's and several education institutes. China is interested in this approach and visited the SME's and education in summer 2011.

Possible Synergy between Psi and Collin

Now we come to the Psi-tool in which the motivation/action behaviour aspects are made explicit based on the Quad e.o. The architecture model of Psi (J. Bach, p.238) seemed to be similar to the cognitive structure model of Collin (B. Cranenburgh, p.150, from motivation to action). I think that we both had the ambition to use the tools for breaking down complexity (Lohausen and China casus); Psi by making motivation/emotional aspects explicit and Collin by making the cognitive functions explicit, enabling a better use of the cognitive/systemic talents of actors. We have the feeling that the combination of the 2 views is synergetic and might accelerate the changing processes to a new economy, enabled by semantic networks and tools.

Building a research network on innovation

Because complexity requires a multi-actor transdisciplinar approach we build a research network in the past two years in China (2 Universities). In Europe we build a network with professors of TUDelft (Technology), WUR (Agriculture) VUBrussels (Evolution and Complexity) and UMaastricht (Complex Learning). In Germany we met Prof. Goldammer (Dortmund); research on heterarchic structures and the design of a new more valued logic to manage simultaneous parallel computing. We think this is also an interesting transformative research topic (conform NSF 2011 program).

Pilot project with China, Province of Hebei, Education bureau.

The AcadeMi-IO, a Public-Private Institute for cooperation of Industry with Education in Holland (www.AcadeMi-IO.nl). Mr. Jan Hak is the president of the AcadeMi-IO and Chairman of the Dutch Machine Industry for Food in the Netherlands. He cooperates with Brics Countries on Total Solutions for Food Security (www.metroplitanFoodSecurity.nl). To realise these complex projects *in one-time right* we proposed the Chinese Educationburo in Hebei to do a pilot in which we do a preliminary design of a Food Park (figure 1) on their specifications in *co-innovation on the Job.*

Theo Lohman

Figure 1

The Need for Total Solutions

Figure 2

Object-Subject Integration / Heterarchy of values

Figure 3. Reflection model

Collin Model