

Beyond Smart Cities

How Modern Football¹ Helps Develop New Forms of Cooperation in Cities and Municipalities

1. Challenges ahead

The only thing that will redeem mankind is cooperation. Bertrand Russel

Cities face enormous economic, environmental and social challenges. Internal and external factors call for strategies to make our cities liveable for the future.

Solutions for green and people-friendly mobility, energy and production (*mitigation*) go hand in hand here with measures against flooding and heat islands (*adaptation*). The importance of cities for the future is duly reflected in the outcomes of the Paris climate summit and the current sustainable development goals (SDGs).

As a response to these issues, the concept of the '*smart city*' embodies not just the interconnected city of the future, but a set of solutions to the future challenges that cities face.

Yet digital solutions to make our lives easier and more efficient are met with growing fears of falling at the mercy of an uninfluenceable, technology-driven force of change, and possibly without the promised benefits.

2. Who's in charge?

But *who is in charge* of this change in cities? Who sets the necessary strategies and puts them into action? As digitalisation progresses, how does everything get integrated and who does the integrating?

I am *working on the assumption* here that mayors, city councillors and city administrations will be just as important in shaping urban processes in the future as they have always been. The challenges and changes mean they must adapt in terms of both strategy and human resources (the algorithm-savvy workforce), and they must do so fast.

The wheels of *administration move slowly*. As regards continuity and dependability, though, that also has an upside. Picking an example from the renewables sector, many investors in solar power favour municipal buildings and their roof surfaces precisely because it is a safe bet they will still be in municipal ownership 20 years on, and still be available for the generation of green electricity.

All the same, in my view there is plenty of scope for boosting potential in terms of communication, cooperation and hence creativity (C³). What is needed is versatility within the existing framework. Department-department partnership (DDP) goes before public-private partnership (PPP).

3. Football as metaphor: C³ (communication, cooperation and creativity)

What can sustainable urban development learn from football? For me, modern football as practised by the best teams is a prime example of how roles and teamwork can be reshaped without changing the basic rules of play.

Cities and their administrations must start by *improving their internal working relationships* so future developments such as IT-based solutions can be usefully integrated for urban development in the interests of the community.

Formations and tactics: Changes within existing constraints

When we look at formations and tactics in football today, little has changed with regard to the rules of play since the game was born. The action still takes place between two goals. Changes in the rules have

¹ Football: Soccer in American English

always served to further the development of the game in itself. Most of all, the introduction of the offside rule² and the back-pass rule³ had the effect of encouraging creativity in play and discouraging an overly defensive, uncreative game. Modern football shows how positive change can be achieved within existing constraints.

Role of the line-up

Not so very long ago, each player had a clearly defined role. The captain was in charge, the centre forward scored goals, defenders were not expected to go over the halfway line and the goalkeeper’s job was to keep goal. Today, footballers *have to be versatile and fill various roles*.

That partly depends on the opponent of the day or the position, but most of all it is true for the changing states of play during the course of a game – from defence right through to attack.

The figure below shows a possible tactical line-up for a municipal administration in matters of climate policy – say for the development of a new district heating solution. In this lineup, the mayor has the role (at the end of the project) of the ‘centre forward’ and so is responsible for following through by pushing the button on the power plant. At the start of the ‘game’ the mayor acts more as the coach who sets the general strategy.



Fig. 1 – Climate policy team line-up

Philosophy of play, alertness and creativity: Team play

The jointly formulated philosophy of play must be internalised by all involved, from the coach to players on the bench so continuity is maintained when *bringing on substitutes or when changes are made in the team*. ‘Blind understanding’ and ‘no-look’ passes come to mind here.

Regardless of the team-focused philosophy of play, however, it is always up to the player in possession of the ball to decide whether to cross, pass back, pass forward or dribble the ball. In such situations, teammates must be ready for whatever comes.

² Offside in football: A player is offside if they are closer to the opponents’ goal than two opponents. This forces the attacking team to seek creative ways of getting to the other team’s goal and thus of scoring.

³ The back-pass rule prohibits the goalkeeper from handling the ball when passed back by a teammate. This forces the team in possession of the ball to direct its play forwards. As an interesting side-effect, it also means that goalkeepers have to develop field player skills and take an active part in the game.

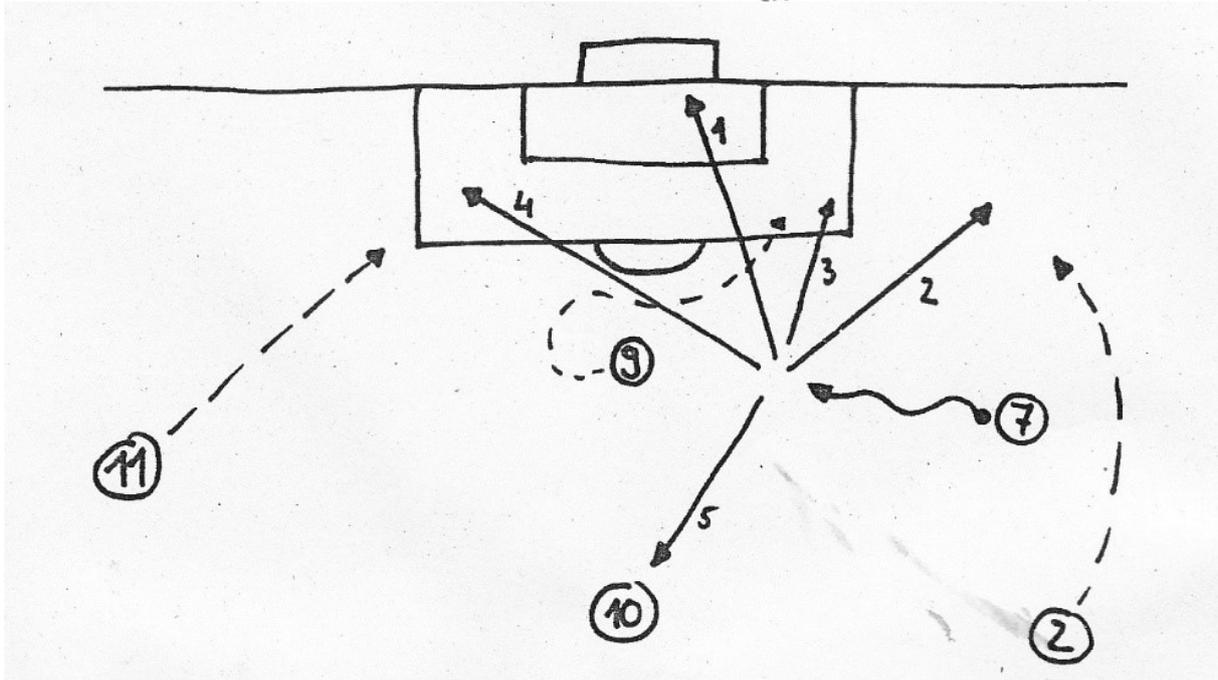


Figure 2: *Five-option attack* - Example of a complex attack pattern requiring full alertness from five players at once when the outside forward (7) moves inside with the ball; by courtesy of Frank Wormuth, Head Coach of the German Football Association (DFB).

As can be seen in Figure 2, the player in possession (7) has at least five different options that the various teammates have to be ready for. That will only work if every one of them is fully alert. The greater the mutual understanding and trust that reigns among them, the less need there will be for active communication.

Whichever way the player in possession decides, play then starts afresh with previously unforeseen possibilities even in the event of a bad pass. In fact, bad passes and deflected shots are often precisely what lead to opportunities and goals that cannot be foreseen or planned for. As Captain Barbossa put it in the blockbuster film *Pirates of the Caribbean III*, "*For certain you have to be lost to find a place as can't be found, elseways everyone would know where it was.*"

Dealing with speed and complexity: Fast transition play

Modern football has become faster and more complex. Where a 'playmaker' in the 1970s and 80s might have had time to think before a pass, those times are long gone. So football is also a good example of a situation where decisions have to be made under pressure of time. That takes skill (*training*), feeling for the situation (*experience*) and courage (*decisiveness*).

In many cases, small units of three to four players moving together pass the ball between them without direct or verbal communication. I suggest that similarities with swarm intelligence⁴ are no coincidence.

Recommendations for (municipal) practice

Modern football is a striking example of how communication, cooperation and a good helping of creativity can move a shared endeavour towards its goal – *with fun to be had by all involved*. In the process, individual and team hierarchies are continuously reinterpreted and reshaped within set constraints.

⁴ Swarm intelligence: The collective behaviour of decentralised, self-organised systems, natural or artificial (en.wikipedia.org/wiki/Swarm_intelligence)

Likewise in the urban context, there is no need to go back to first principles right away. Existing structures must be acknowledged and recognised as the starting point for moving forward⁵ and for change within existing constraints along dimensions such as:

- Reinterpretation of workforce roles (team lineup)
- Shaping of joint action (philosophy of play, alertness and creativity)
- Rapid decision making (dealing with speed and complexity)

Overall, it is a matter of *improving internal communication* (with regular interdepartmental coordination) and better collaboration (project-oriented working groups with appropriate decision making freedom).

Trying it out: Urban district energy supply

This approach can be prototyped by applying it to specific projects where all involved sign up to work accordingly. Ideally, the procedure and the experience gained should be documented and subsequently jointly evaluated in order to fine-tune the next iteration. The simple rule is get together and talk.⁶ That is the first step, and the most important.

Example:

In urban neighbourhood projects, planning should address energy issues from an early stage – from building orientation (passive energy gains) and energy-efficient building standards to comparison of alternative energy choices. Ideally this should be an integral part of the urban planning process (continuity).

And what about smart cities?

The development and the shaping of our cities place major demands *on those responsible*. Digitalisation is a means to an end. And the end is the sustainable, liveable city.

*“In complicated systems, we can try to figure out the best solution. In complex systems, we need workable solutions and fast iterations.”*⁷ In football, that would be fast transition play.

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Short Bio

Klaus Hoppe, born 1961, is an Urban Geographer supporting municipal processes to integrate systemic thinking from of sustainability in general to current smart city approaches. “For me change has to appreciate the situation at hand. This is where we have to start and build up more integrated solutions.”

Klaus worked for local (City of Freiburg, Germany) and regional governments for 20 years. He is a passionate football player and owns a training licence.

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⁵ Friedensreich Hundertwasser: He who does not honour the past loses the future; he who destroys his roots cannot grow.

⁶ See also Daniel Goleman, Focus: The Hidden Driver of Excellence, 2013, p. 141

⁷ Laloux, 2014, p. 211