Crocodiles, Agile
and ITS delivery

To enable the delivery of ITS which meets the demands of clients and the end user, solutions are increasingly required which can be delivered more quickly using an adaptable approach. So, what does this have to do with crocodiles?

Jude Paterson,
Director and
Agile Trainer,
IT - Howzat

In order to aid the successful implementation of agile philosophy, Jude Paterson, an Agile trainer, has introduced a new approach which uses Ghanaian Adinkra symbols and thinking in support of the agile journey. ITS UK member Nicander is currently using this approach as it sets out to develop and deliver one of its newest ITS projects, beginning the journey on the four key steps to successful agile ITS implementation.

Agile Philosophy - A Journey of Four Principal Steps

Within Ghanaian culture there is great use made of Adinkra symbols, which represent a range of circumstances and events. They have been in existence for many centuries, with new symbols and proverbs being added to reflect new situations. Figure 1 illustrates this Agile Philosophy, and attempts to represent the core attributes required for its successful implementation.

1. Accept Change – The Crocodile

The Adinkra symbol for adaptability is Denkeyem, the crocodile. The crocodile lives in the water, yet breathes in the air, demonstrating an ability to adapt to changing circumstances. According to Darwin's Origins of the Species, those that survive are species that are able to best adapt and adjust to the changing environment in which they find themselves [Megginson (1963)].

It is as a result of this adaptability that the concept of crocodiles is used in this new approach to introduce the importance of **embracing change** in agile thinking.
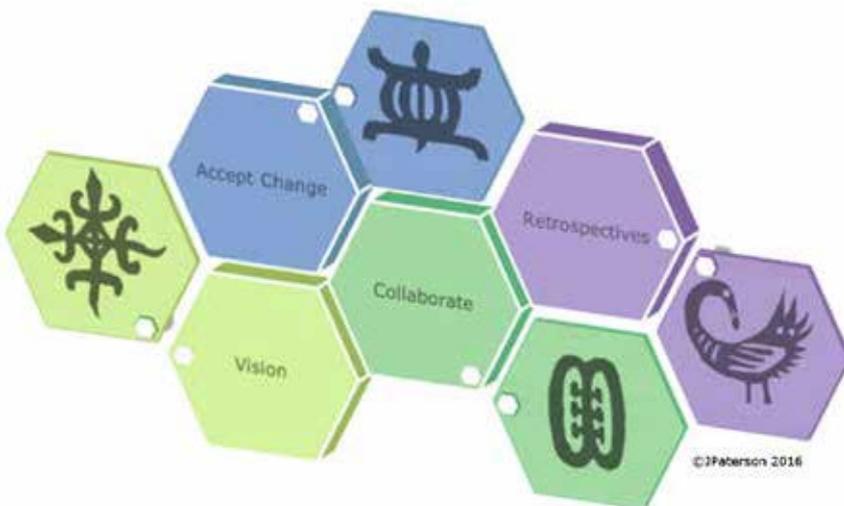
▶ Figure 1

A core philosophy of agile working is that the solution being developed needs to be able to flex and adapt. When working in an agile manner, everyone involved needs to welcome and embrace change.

In traditional approaches change is often resented, as it is seen as having the potential for delaying the overall delivery and increasing costs. When working in an agile manner, change should be welcomed with the re-prioritisation of development features ensuring that the focus is on delivering the most important feature at any point in time (and potentially not delivering some of the less important ones). This means that the scope of an agile project can adapt and change in line with current priorities, whilst ensuring the project is still delivered on time and in budget.
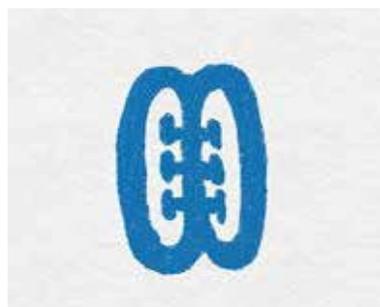
2. Vision – The Siamese Crocodiles
The Adinkra symbol which highlights the fact that agile thinking needs **clear vision**, and a focus on working towards a common goal is that of the Siamese Crocodiles. These crocodiles have two heads, but share a common stomach. The two crocodiles fight over food, however as they share a common stomach, they are in fact harming each other by fighting over it. Their common goal is to eat sufficiently between them to satisfy both of them. The Ghanaian proverb that this represents is to 'prevent in-fighting' (or in our case silo working).

To ensure that projects can embrace change and adapt to deliver the solutions that customers need, there needs to be a clear vision and goal. Without a clear vision, it is easy for projects to become wrapped up in adapting to change, perhaps focusing on an area that is of particular interest to an individual or team. Silo working is very much against the philosophy of agile working, where people and interactions are highly valued. It is therefore important that the project vision is made clear to all that are working on it, and that there is reflection during the evolution of the solution to ensure that the project stays aligned to the vision. This can also apply more widely than on one project, the vision must be clear across the whole portfolio of projects which are being undertaken.

By knowing what the clear vision is, collaborative working can also ensure value is added to the business by evolving a solution which is also in line with its own corporate vision.

**3. Collaboration –
The Tongue and Teeth**
Expanding on the Siamese crocodiles, which encourage us not to work in silos and focus on a common vision, the Adinkra symbol for the Tongue and the Teeth acts as a good reminder to think about **collaboration** and communication throughout projects. This proverb reminds teams that the teeth and the tongue may sometimes work against each other in our mouths, but

that when they work together they achieve more than when they work alone. Making sure that the correct stakeholders and team members are considered in project discussions, workshops and communications will assist in developing a collaborative style of working which will enable the achievement of more than as individuals working independently.

As is mentioned within the vision, teams must work together to achieve a common goal. To enhance the evolution of the solution it is vitally important that individuals and teams don't work in isolation and that technical teams work alongside the business teams to ensure that the technical solution has real business need at its heart.

Agile working encourages the use of a variety of communication and collaboration tools to aid the open and transparent working across individuals and teams. These include making increasing use of face-to-face communications (including holding daily stand-up meetings); visual planning and tracking techniques (ranging from physical team boards, to interactive online tools); running workshops; and demonstrating prototypes or models.

**4. Retrospectives –
the Sankofa Bird**
The final Adinkra symbol introduced as part of developing an agile mindset, is Sankofa. Sankofa is a symbol of a bird flying forwards,
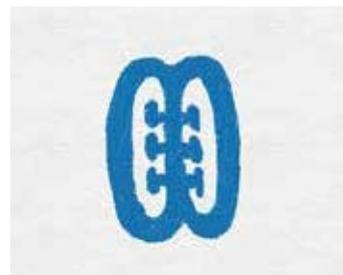
but remembering to look back and catch its egg which represents its future self. This symbol literally means 'return and get it', which relates to the importance of learning from the past to build for the future. **Retrospectives** should be made productive by carrying them out regularly and learning from the past to help improve in the future.

One of the real advantages of agile retrospectives is that they are carried out regularly throughout the project lifecycle, giving repeating opportunities to reflect and learn from the past. To ensure that suitable solutions are being evolved over the increments of projects, each deployment needs to be reviewed and reflected upon to consider if sufficient has been achieved within the incremental solution to meet business needs and deliver on the project vision. However, that isn't the only time or thing we should be reflecting on when working on projects. Reflecting on our delivery and behaviours throughout the project can help teams collaborate together and should be done in such a way that it encourages open and transparent feedback.

Retrospectives are recommended at the end of each timebox (or sprint), the short 2-4 week development timeframe; at the end of each increment, a group of timeboxes that provide a deployed increment of the solution; and at project level. Importantly, they are carried out regularly throughout the project lifecycle, giving opportunities to embrace change and adapt working practises.

Typically, a retrospective considers the following areas for the relevant review period:

- What went well within the team that we don't want to forget?
- What things were holding the team back?
- What did we do as a team that we'd like to change?
- What things still puzzle us?

Agility with Rigour in ITS

ITS (Intelligent Transport Systems) projects are by their very nature complex. Often they are specified to incorporate novel, conceptual functionality and technology for which requirements cannot be initially defined at a detailed level. An agile approach is particularly suited to develop such projects as it allows client and developers to explore these undefined areas interactively, thus teasing out ideal, achievable solutions more effectively than up front detailed specification can do.

It is important that the agile methodology is implemented with rigour. This is achieved both though teams adopting well-structured processes for managing sprints, incorporating the themes of accepting change, vision, collaboration and retrospectives, and especially through close, collaborative engagement of the client in the process and those themes. A well implemented agile approach can then be scaled across project, programme and portfolio level.

Becoming Agile in ITS is a Journey

Many organisations are beginning to see the benefits of adopting a more agile approach to delivering their projects, and indeed to enhancing and growing their business.

Nicander is one such company. Nicander, and their staff, have

been involved in the delivery of ITS projects since the 1980s. These projects have been small and large and have followed a range of methodologies and testing regimes for delivery. Once installed, the systems have required continual improvement through enhanced functionality and geographic coverage to meet ever changing client demands and to take advantage of new technologies as they come to market. Client requirements have been at the heart of this process and typically requirements have been extremely well defined and detailed. However, today's ITS clients are seeking solutions to meet outputs and outcomes such that their requirements are defined only at a high level and the precise detail is unlikely to be fully described at the outset. Technology today is changing at an ever increasing rate and any solutions delivered need to be able to integrate these new ideas quickly and easily.

As part of their business strategy, Nicander have commenced their agile journey and appreciate that this is not simply one of change, or indeed something that will occur overnight. Truly being agile occurs over time when everyone in the organisation understands the approach and has changed their thinking to focus on delivering incremental solutions in fixed timescales.

The transformation of an organisation from working in line with traditional management structures and project approaches to one that focussed on the agile philosophies described in this article takes time and changed behaviours throughout the organisation.

At Nicander, their journey has
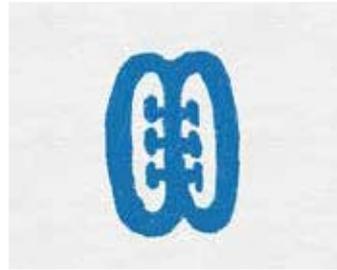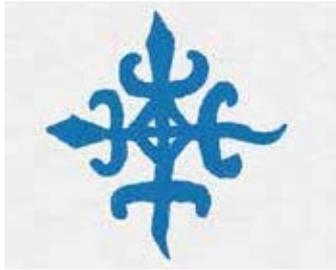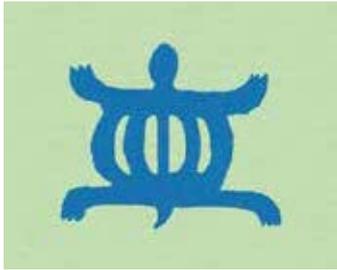
commenced by considering these top level philosophies of:

- Embracing Change
- Vision
- Collaboration
- Retrospectives

They are looking to encourage these behaviours across their portfolio of projects, being delivered for a range of clients.

In parallel, they have commenced using the agile SCRUM methodology at the team level on one of their projects with a view to tailoring and expanding these approaches as they continue on their agile journey.

Nicander are 6 months into the development of a new solution for an international client, which is planned to go-live later in 2017. Client and Nicander staff are working closely to define and deliver software through two-week sprints using a continuous integration process and comprehensive automated testing. The client's team is based at Nicander premises for one week in every two, to conclude each sprint and define the next. Use of the VersionOne agile development tool allows the necessary detailed collaboration within and between teams, in particular for the half of the sprint when the client and Nicander team members are in different countries. This whole process requires significant trust and true collaborative working.

So far, so good!

Are you ready to become a crocodile and adapt to embrace an agile way of thinking too? ◆