

# Business processes in international humanitarian aid

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**Abstract:** International humanitarian aid provides assistance such as food, shelter, and health or counseling services across national boundaries to communities in need. Universally, international humanitarian aid organizations play a critical role, by supporting the survival and recovery of communities affected by crises such as natural disasters, conflicts or disease epidemics. In most instances the technological, human and financial resources of diverse countries are put together to support communities facing crises. These events, often require immediate action and long term support to sustain the community needs and are highly sensitive to the contexts in which the crisis incidents occur. Large amounts of funds and resources are received each year to support such initiatives and successfully distributing humanitarian aid is a complex operation. Given the size of the funds involved, the sheer complexity and criticality for fast, efficient and effective action in these initiatives, it is somewhat surprising that there is not much evidence of a business process focus by the humanitarian community. This chapter describes the core business of International Non Government Organizations (INGOs), depicts how the main aspects of Business Process Management manifest within INGO's and points out the values and challenges of process centric approaches within international humanitarian aid organizations. The latter part of the chapter vividly illustrates these aspects using two example cases within the International Federation of Red Cross and Red Crescent Societies.

**Keywords:** Humanitarian aid, case study, business process management, Strategy, Governance, Methods, Tools

## 1. Introduction

The last ten years have seen a number of large high profile disasters killing hundreds of thousands of people. There was the Indian Ocean tsunami of 2004, the Pakistan earthquake in 2005, the Haiti earthquake and Pakistan floods in 2010. In that time, as shown in the case study below, the International Red Cross was able to significantly improve its ability to help the population in need. It reduced the cost of supplying goods by 80% and halved the delivery time, allowing many more people to be helped. The improvements in business processes that led to this transformation are discussed in this article, along with some challenges that remain within the sector.

International humanitarian aid is assistance provided across national boundaries to communities in need. It consists of goods such as food and shelter, and services such as health or counseling. The aid is typically provided in response to crises such as natural disasters or disease epidemics. The primary objective of humanitarian aid is to save lives, alleviate suffering, and maintain human dignity.

The bulk of international humanitarian aid is provided through three channels, sometimes referred to as the three pillars of humanitarian action [1], namely the UN and governmental action as one, international non government organizations' action as second and the humanitarian work of the Red Cross Movement as third.

The United Nations has a number of agencies and funds providing both assistance and co-ordination, including the United Nations Children's Fund (UNICEF) [2], the Office of the United Nations High Commissioner for Refugees (UNHCR) [3], the World Food Program (WFP) [4] and the United Nations Office for the Coordination of

Humanitarian Affairs (OCHA) [5]. The latter provides an overall co-ordination role for international humanitarian response. A significant response effort passes through international non-government organizations such as the International Rescue Committee (IRC) [6], Save the Children International [7] and World Vision International (WVI) [8]. In many high profile disasters, the largest single response effort comes from the Red Cross Movement<sup>1</sup>, led by the Red Cross or Red Crescent society of the afflicted country. The International Red Cross movement consists of Red Cross or Red Crescent organizations in 186 countries [10], the International Committee of the Red Cross [11] which works in conflict situations and the International Federation of Red Cross and Red Crescent Societies (IFRC) [12] which co-ordinates and assists in disasters and health crises.

In practice the work of the aid agencies is highly complex and there are many challenges in running an efficient business process. The level of investment in supporting IT systems is especially low, estimated at less than 2.4% of turnover in international non government organizations [13]. This is low in comparison to the investments seen in the private and government sectors, which have an average of 5.9% of turnover spent on IT systems [14]. Other challenges are in the co-ordination effort with other agencies, the legal framework of the recipient and donor countries (for example customs requirements or export restrictions) and the requirement to adapt to local requirements.

Much of the work is done through human interaction, with a strong focus on quality and accountability to ensure worthwhile outcomes. In the first instance, these outcomes may be to provide rescue, food, shelter and health services, but generally humanitarian programs also focus on longer term recovery and reduction in vulnerability for the affected communities. Given the complexity and variability of programs, much effort is put into an appropriate policy environment that defines working methods and best practices. Some examples of such policy environments are; the Humanitarian Charter and Minimum Standards in Disaster Response published by Sphere [15], the UN Disaster Assessment and Coordination Field Handbook [16], the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations [17] and the Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief [18]. These policies guide and define the boundaries, expectations and governance around the actions taken in the humanitarian aid situations.

International overseas aid from governments totaled approximately US\$120Bn in 2009, of which approximately US\$9.5Bn was humanitarian aid [19]. Add to this the substantial donations from private individuals, philanthropic organizations and business, whose contribution is more difficult to quantify, but in some countries is more than double the government aid [20]. As an example, in the tsunami of 2004, it is estimated that US\$4Bn in private donations were dispersed, over half of this by the Red Cross and Red Crescent movement.

Given the size of the funds involved and the nature of the related tasks, it is maybe somewhat surprising that there is not much evidence of a business process focus by the humanitarian community. Currently there are only a few specific areas of work within INGO's, where a business process view is taken. The management of related supply chains is a common area where a process view is observed across most INGOs. Aidmatrix [21], a US based NGO is an exemplary case study in this context. They looked at the US domestic disaster response effort as a business process that could be enhanced through a systems approach and designed a web based product that moved all the key process components into a single portal, accessible by donors, aid agencies and people in need. Through implementing appropriate business rules and enabling the users of the system, they have been able to simplify and streamline the overall disaster response process. Their product is now being used in all major US disasters, coordinated by the US Federal Emergency Management Agency [22]. A trial version of the disaster management portal is available [see 23].

This chapter focuses on the value and challenges of a business process management approach in the distribution of international humanitarian aid (especially in disasters). The material is based on a number of case studies and the personal experience of the principal author who was the Chief Information Officer for the International Federation of Red Cross and Red Crescent Societies (IFRC) for over 5 years. First, the notion of Business Processes through the lens of the international humanitarian community is presented, describing how the core elements of Business Process Management manifest in humanitarian aid organizations. A summary overview of this discussion highlighting the values and challenges for BPM in the humanitarian context is provided. Next, two case studies; on the humanitarian supply chain and volunteer management is presented to illustrate the reality of the aspects discussed earlier. The paper concludes with a synopsis, pointing to some challenges and opportunities for future work.

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<sup>1</sup> For example, in the tsunami of 2004, the Red Cross and Red Crescent raised more than \$3bn [9] of the \$7bn total funds raised [9].

## 2 Business processes: the views of the international humanitarian community views

While the humanitarian community involved in international disaster response is very diverse, this chapter attempts to synthesize the community's perspective towards business processes using anecdotal evidence from the principal author's prior experiences. First, a brief overview of the core processes within INGO's is provided, with a particular emphasis on the international disaster response. Then the authors' view on the manifestation of core elements of Business Process Management (BPM) (see Figure 1) as stated in Rosemann and Van Brocke [24] is provided, covering how Strategic alignment, Governance, Methods, IT, People and Culture aspects influence the decisions and pathways for applying BPM in INGO's.

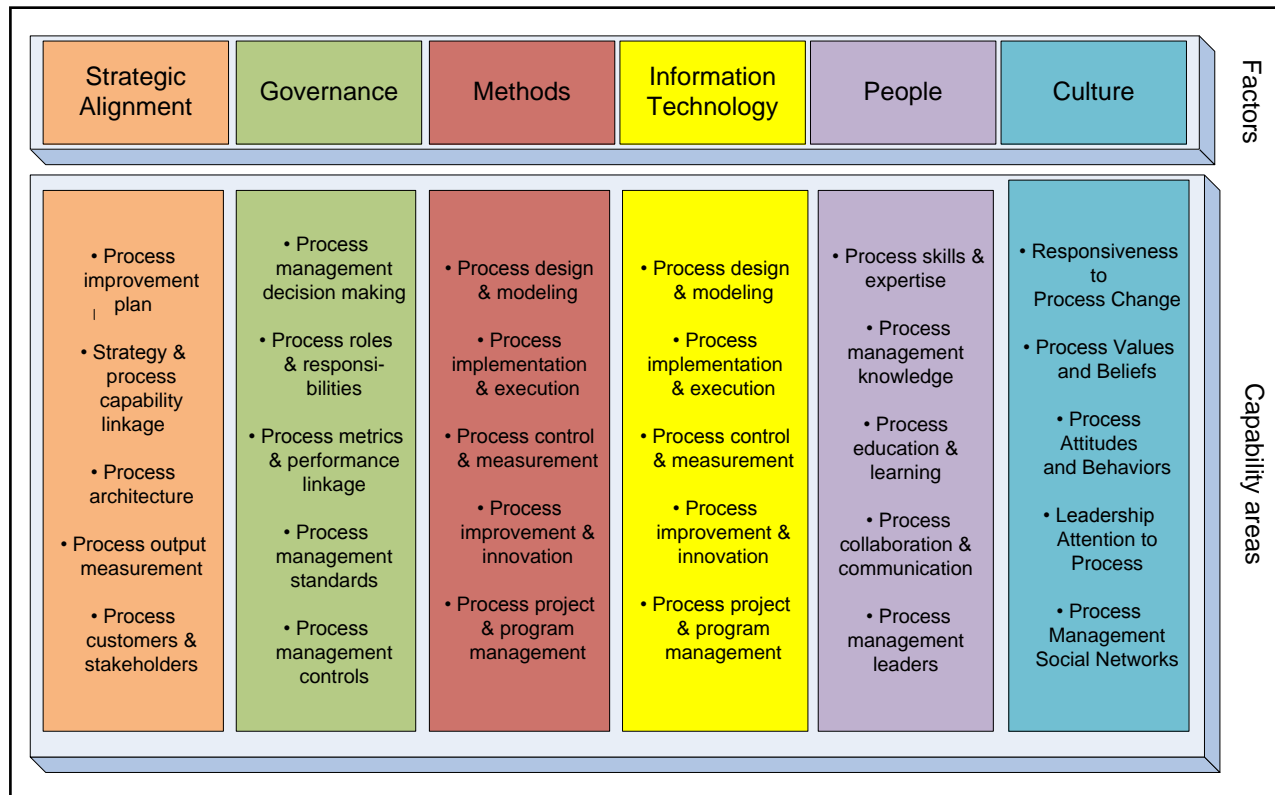


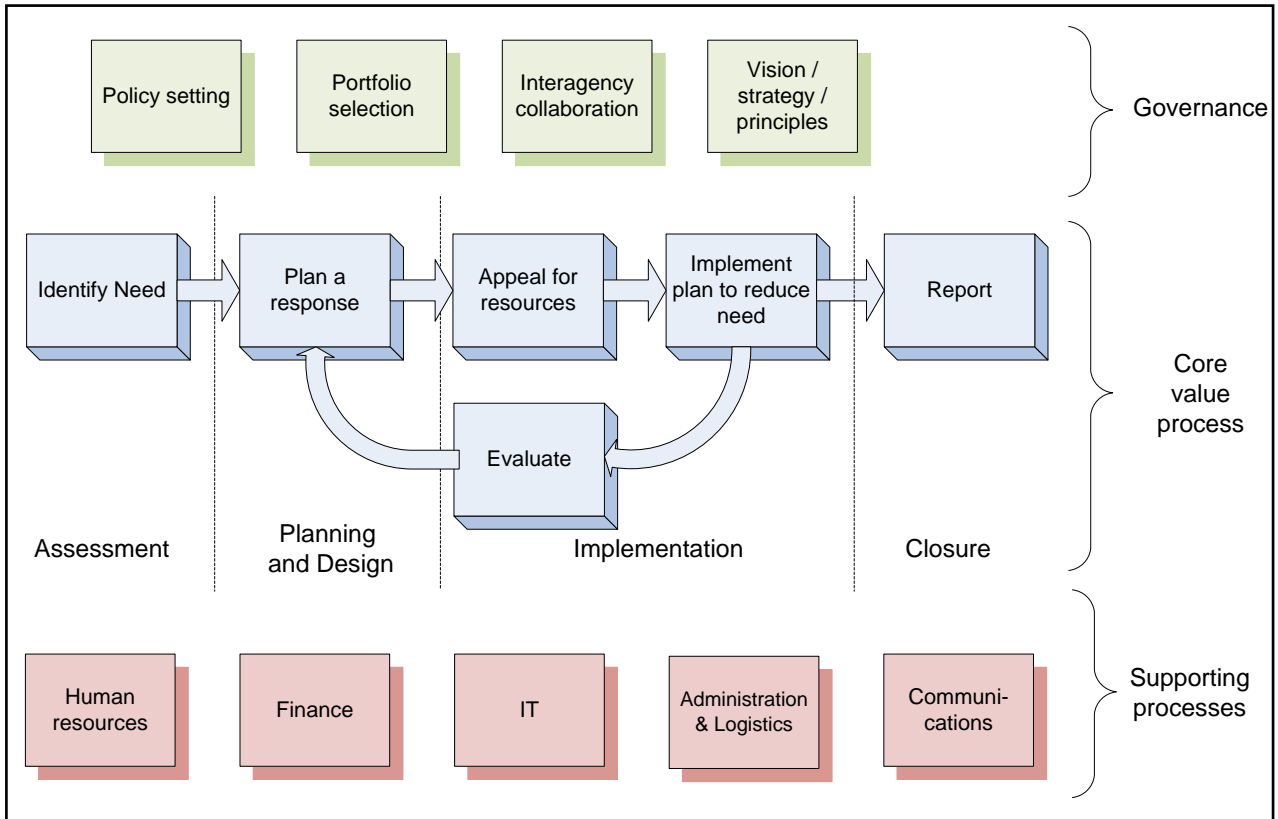
Fig 1. The Six Core Elements of BPM

The complexity of the humanitarian response can be represented in business process terms in Figure 2. The actions can generally be broken into three areas for analysis. There are the core value processes, implementing programs within the communities in need. There are a set of processes that support this work through for example, fund raising or recruitment. And there are processes often referred to as governance, which set policy and prioritize the work.

The core value processes are usually project based and project management methods are key to achieving successful outcomes. A program will start with an assessment of the humanitarian need. This assessment may identify a wide variety of requirements, from fresh water to immunization to counseling. Each INGO will have a specialist capability, for example Médecins Sans Frontières [25] specializes in medical facilities and Save the Children International [7] specializes in programimproving childrens' lives. The program of work may consist of many projects, from many different agencies. In deciding which needs to address, there is strong collaboration between agencies to best serve the community's requirements. There are structures in place to facilitate this collaboration including the Inter Agency Steering Committee [26] and the United Nations Office for the Coordination of Humanitarian Affairs [5], shown in Figure 2 as interagency collaboration.

Following assessment, a plan of action is created and the resource requirements are defined. These resources are requested through an appeal for funds. The appeal may be to individual donors, to governments or to corporate entities. Fund raising is probably the best understood process within the humanitarian community with sophisticated IT systems available (for example Raiser's Edge from Blackbaud [27] ), clear metrics and industry benchmarks [28].

With the funds that are raised, the program is implemented. There is ongoing evaluation and this, along with the response to the appeal, will lead to re-planning and revision. Finally, a report is produced to inform the donors on how their money has been spent. In many situations this cycle is repeated a number of times as the situation evolves and humanitarian needs change. For example, the initial needs after a disaster might be for search and recovery and first aid, which evolves into needs for hospitals, food and water, then into a need for shelter, reconstruction and counseling.



**Fig 2:** Overall humanitarian aid process

The support processes have many similarities to those in many commercial organizations. Operations are generally complex due to the international nature of the work, with multiple currencies, different employment laws in each country and multiple languages. Some support processes such as administration and logistics are sufficiently different to the standard commercial processes that IT systems have to be designed specifically for that purpose. These issues add to the costs of the processes.

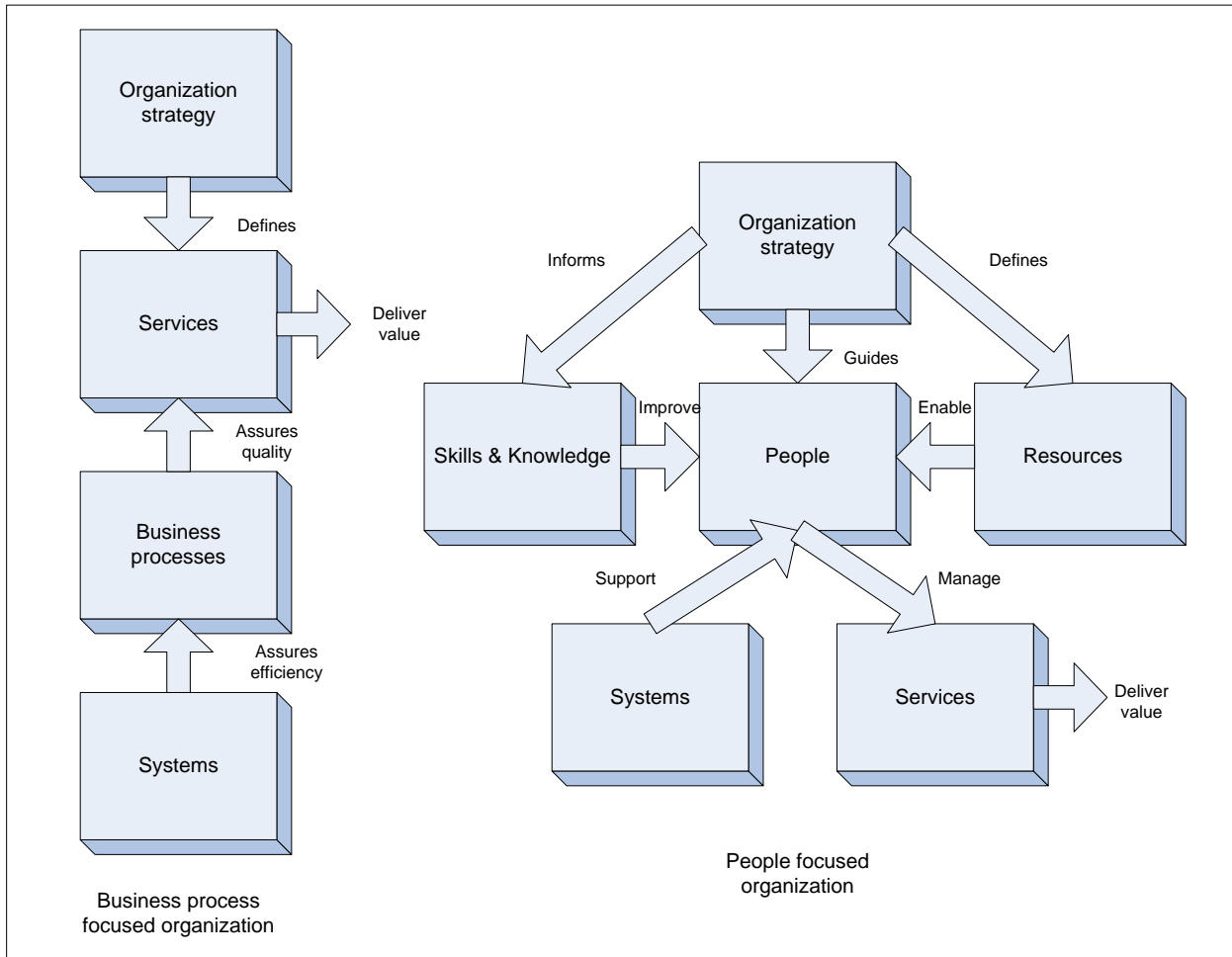
The third major stream of work in INGOs is that of governance. This area encompasses many activities that provide a decision making framework. This stream receives considerable attention in the INGO world, and it is seen as important in ensuring that the activities of the INGOs are in the best long term interests of those people in need.

## 2.1 Strategic alignment

Rosemann and van Brocke defines strategic alignment as “*the tight linkage of organizational priorities and enterprise processes enabling continual and effective action to improve business performance*” and describe how a strategy-driven process improvement plan, bi-directional linkage between strategy and business processes, an enterprise process architecture and a well-defined understanding of process outputs are critical elements to achieve strategic alignment [24].

The contrast between the process focused organizations (for example retailers) and the people focused organizations (such as Red Cross) can be summed up in Figure 3. In a human focused organization the realization of a strategy is driven through individuals who are sufficiently capable to understand the strategy and then to undertake

tasks within the local context that fulfils the strategic aims. The interpretation of the strategy is done through policy (for example with a policy on how to manage volunteers [29]), training courses (such as the Red Cross Impact Training Course [30]) and reference subject matter experts who can assist in recommending specific actions based on their experience and deep understanding of the subject. There is little focus upon, or understanding of, business processes.



**Fig 3:** Contrasting organizational perspectives

The information systems environment focuses on supporting the individual staff members as a way of ensuring that the processes are followed. To give an example, the finance system at International Federation of Red Cross and Red Crescent Societies (IFRC) was engineering to provide immediate feedback to field staff on the financial health of their project (supporting the individual) while at the same time ensuring the reporting requirements of the organization under international financial reporting standards (supporting the process).

In contrast, a process focused organization has a clear view on how each service they provide supports the strategic aims of the organization. The processes are often monitored with metrics on process compliance and reflected in staff performance appraisals. The processes used to deliver these services are consolidated and optimized to reduce costs and improve quality with all encompassing IT systems such as ERPs, providing a backbone that is critical to the operation of the organization. When the system's environment fails in a process focused organization the consequences are often very serious. One example of this was the troubles encountered by British Airways on the opening of Terminal 5 at London's Heathrow airport [31, 32].

Another difficulty in approaching a business process improvement plan for humanitarian organizations is defining 'improvement'. While it may be possible to measure certain enhancements in the support processes [33], (for example reducing the direct costs of transporting goods), the improvements from the core value processes are notoriously difficult to measure. At a high level, success measures are reflected in the eight Millennium

Development Goals, MDGs [34]. Millennium development goal 1 is to eradicate extreme poverty and hunger by halving, between 1990 and 2015, the proportion of people whose income is less than \$1 a day. This target is measured across multiple countries over 25 years, so the impact of individual humanitarian programs is difficult to attribute to the overall goal.

The humanitarian programs undertaken strive to positively influence the situation of the people in need, and most well designed programs will define the positive impact. Unfortunately there are many other factors that might affect achieving these outcomes, such as conflict<sup>2</sup>, adverse weather events<sup>3</sup> and corruption<sup>4</sup>. It is almost impossible to attribute a particular outcome to one thing alone; and running the same business processes in two situations may have very different outcomes. This may explain the strong emphasis and focus on the capability of people, why an iterative plan-do-check-act approach is used, and the extensive use of in-program evaluations; with business processes taking a back seat.

## 2.2 Governance

Governance “*establishes relevant and transparent accountability, decision-making, and reward processes to guide actions*” [24]

As mentioned in section 2, there is considerable focus in humanitarian organizations on governance, accountability and decision making in complex multi-party operations. The collaborative nature of humanitarian actions means that processes occur across organizational boundaries; governance structures may change with each project. The head of operations or the head of an organizational unit holds considerable authority and must carefully manage the operations under their control.

Inside humanitarian organizations, by contrast, business processes are predominately implemented within siloed organizational units. The management of these units provide the governance capacity where decisions can be taken within an existing hierarchy, metrics set, measured and acted upon. An example of this is the IT support processes, where ITIL may be implemented and the process governed inside the IT department, with the assistance of service desk software. Metrics can be defined (for example number of incidents treated within a timeframe), measured and referenced in individual’s appraisals.

Within an organizational unit the business process director role (as defined in [35]) is usually taken by the head of that organizational unit. The resourcing of other process roles depends largely on that person’s commitment to business processes. Given the limited size of most organizational units, there is no capacity to permanently employ business process consultants or business process architects. These are generally contracted with any process improvement projects. Where permanent process analysts do exist, they work for the organizational unit manager, and are not always available to work on processes that cross organizational units.

The governance of processes becomes very difficult when the process crosses organizational boundaries. One example commonly seen in the humanitarian community is the difficulty in enforcing a staff performance appraisal process. This process touches every employee, but if the individuals do not feel that it is assisting them in their immediate task (such as responding to people’s needs in a disaster situation) then compliance rates can become unacceptably low.

## 2.3 Methods

Methods are “*the tools and techniques that support and enable consistent activities on all levels of BPM (portfolio, program, project, operations)*” [24]

One significant challenge within a humanitarian organization, is to communicate effectively with staff to present a process perspective of the organization. The first challenge is that of language. For example, in the Red Cross there are 4 official languages (English, French, Spanish and Arabic) and two unofficial languages (Russian and Mandarin). Translating even basic business process documents which are developed in English is a challenge. Translators or interpreters find it very challenging to represent terms such as “business process management” or “process control” in another language when they do not understand it in English.

In some cases where process diagrams were translated in many languages (an expensive task in itself) there was ambiguity through local language variations. We found that the terminology used in describing the warehouse

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<sup>2</sup> For example, the humanitarian programs in North Eastern Sri Lanka after the 2004 Asian tsunami were severely hampered by the Tamil conflict

<sup>3</sup> For example, hurricane Gustav in Haiti in 2008 hampered ongoing humanitarian efforts responding to previous hurricanes and tropical storms

<sup>4</sup> As is widely reported in Afghanistan

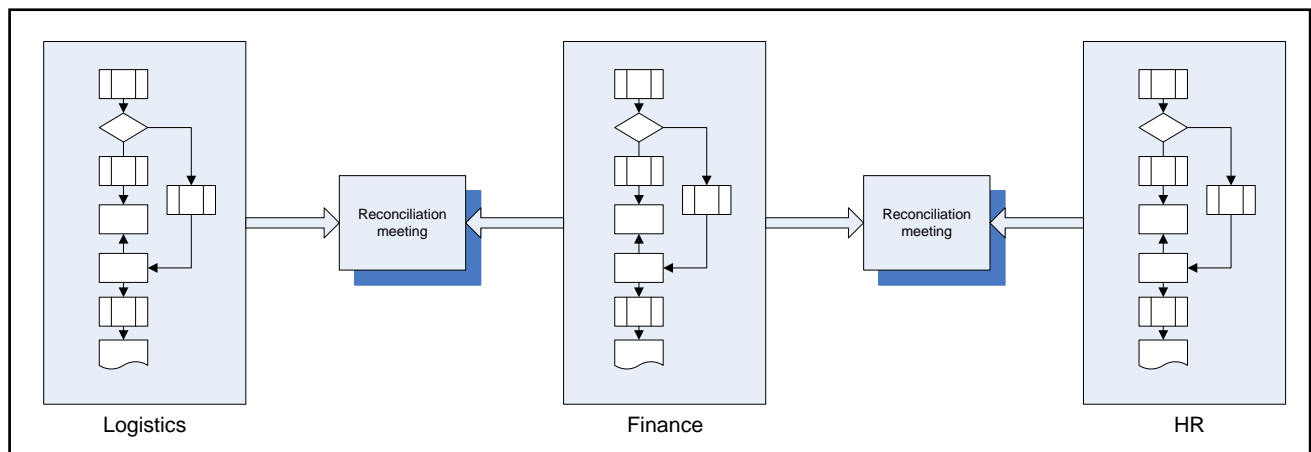
management process (item, waybill, pipeline etc) translated differently between Spanish used in Europe and Spanish used in Central America where the main warehousing hub was located.

The industry standard techniques of business process modeling such as BPMN, Archimate and ARIS are generally outside the skill sets of humanitarian workers. Less sophisticated tools such as swimlane diagrams tend to be used, but they lack the features of other tools (such as the ability to; reuse, support collaborative model development, have multiple views, manage complexity through multi layers and support the distribution of models through diverse dissemination channels [35, 36]), which inhibits humanitarian originations in reaching the benefits of effective process modeling.

## 2.4 Information Technology

Information technology (IT) refers to “*the software, hardware and information systems that enable and support process activities*” [24]. As mentioned earlier in this chapter, IT departments within humanitarian organizations receive significantly fewer resources than those in private or government sectors. This restricts their ability to provide IT systems that support the organization’s processes. Some humanitarian organizations run ERP systems (for example SAP, Navision or Oracle E-business suite), but the process needs of the organization often do not line up with the traditional process models implemented by the ERP vendors. Given the restricted funding environment, undertaking significant configuration or coding on these systems is often unrealistic. There is also a perception that ERP systems restrict the ability to adapt business processes to local variations.

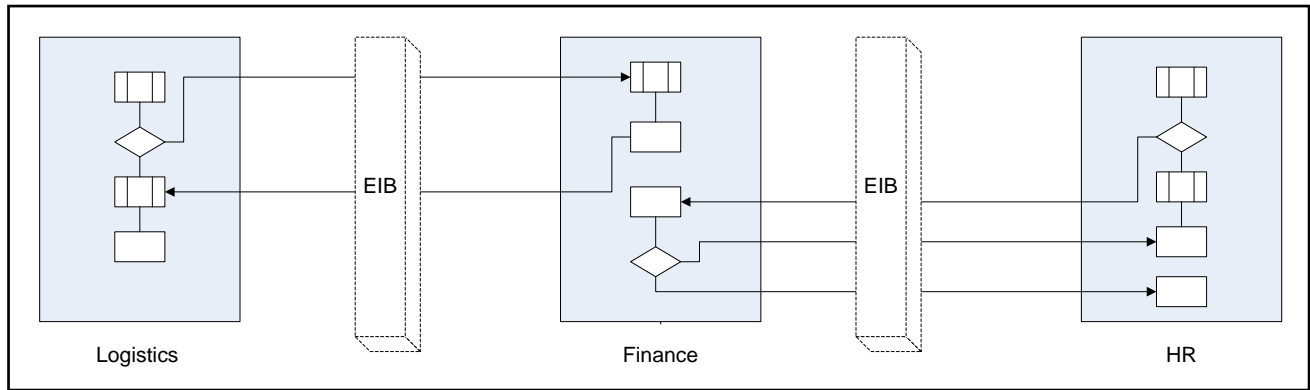
When business processes are codified and supported with IT systems, this can create challenges for IT departments. When processes are run manually and within organizational units, there are human based systems in place to reconcile outputs between these units (Figure 4)



**Fig 4:** Silo based business processes

Once the processes are automated, there is a need for interaction between organizational units that is enabled by an enterprise integration bus (EIB). The processes can now be made more interactive. As an example, the payroll in an organization is usually managed by the HR Department. Traditionally, the payroll for each month would be created and submitted to finance for recording as financial transactions. Any discrepancies from incorrect coding would be reconciled in a meeting or phone call between HR and Finance.

When an enterprise integration bus is implemented, the HR system might implement business rules to prevent staff being allocated to incorrect financial codes when they are assigned to roles. This eliminates the need for reconciliation meetings and the process is more interactive between systems, as shown in Figure 5



**Fig 5: Cross organizational business processes**

When there are discrepancies that cause a particular transaction to fail, the problem may be in one of the organizational units (HR or finance) but it also may be caused by software issues in the EIB. Thus the IT department might find themselves ‘caught in the middle’ when cross business processes are implemented.

The exact responsibilities for all possible issues can be difficult to agree and may be unclear. This often means that the IT department must investigate and allocate process exceptions themselves, just to keep the systems running. The implementation of an EIB may force the IT department to take a central role in managing cross functional business processes, often without any additional resources. This encumbrance may dampen the enthusiasm of any CIO in advocating a BPM approach.

BPM is defined as a discipline that integrates IT and business process expertise with the goal of transforming isolated business efforts into integrated and measurable cross functional activities that deliver operational and strategic advantages [37, p 4 & 6]. Humanitarian organizations have both a limited IT capability and real difficulties in developing cross organizational IT systems to support complex business processes. This can have a direct impact on the process orientation of these organizations.

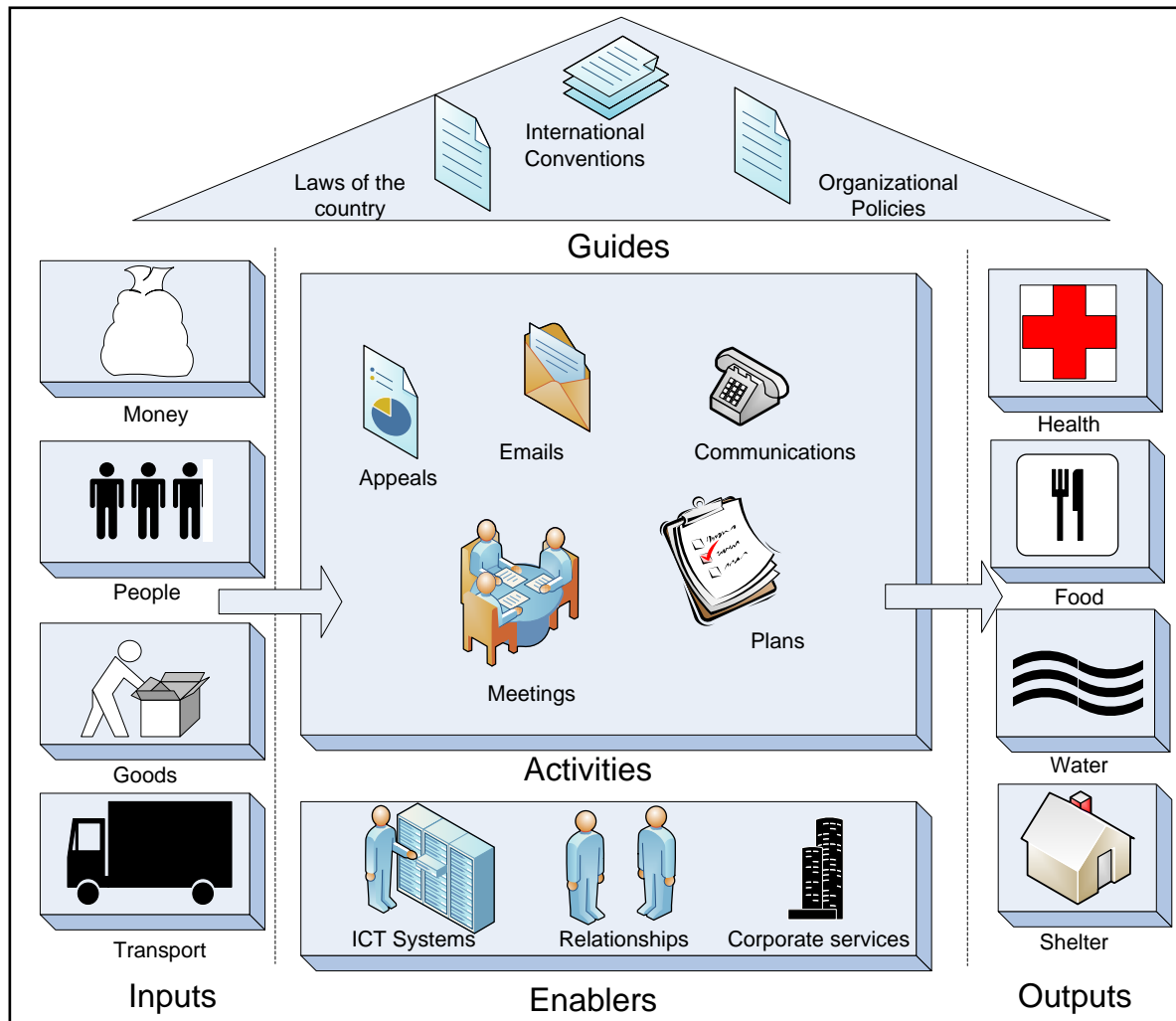
## 2.5 People

This comprises human resources, and can be defined as “*the individuals and groups who continually enhance and apply their skills and knowledge to conduct the core business and relevant improvements*” [24]. One of the pleasant surprises of working in the humanitarian community is the quality and commitment of the people in the sector. The diversity within the sector is unprecedented, with different cultures, countries and educational backgrounds providing a superb environment for developing solutions in challenging environments. Unfortunately within this talent pool, there are very few who join the organization because of an evangelical approach to process improvement.

There are pockets of process focused individuals, typically within finance, logistics and IT. Often such people are in high demand by the private sector and the salaries paid in the humanitarian sector are not competitive, hence staff attrition in this area is very high. Staff working on the relief and health programs typically have low levels of basic IT capability which restricts the ability to implement complex IT systems. There have been attempts to ensure that staff are able to use computer applications at a recognized level of competence, through implementing the International Computer Driving License (ICDL) certificate [38]. For example in the Arab States, UNESCO Cairo Office rolled the ICDL program in 12 Arab States with more than 200,000 registrants, over 500 accredited centers, and more than 50,000 holders of the certification [39].

The people who work in the humanitarian sector often do not see their actions as part of a set of business processes. Figure 6 represents a more typical view from a staff perspective of the workings of a humanitarian organization. In for example a disaster response situation, staff will undertake activities such as meetings, fund raising, developing plans and communicating with stakeholders. These activities are undertaken based on a staff member’s experience and within the policies and rules of the organization. Through these activities the donated goods, money, transport and people are transformed as quickly and efficiently as possible into the health services, food, water and shelter that the affected population is in need of. The Business Process moniker is usually applied to just the support processes such as the recording of financial transactions or the logistics of moving goods.





**Fig 6:** Non-process perspective on operations

## 2.6 Culture

Culture in the Context of BPM, is “the collective values and beliefs that shape process-related attitudes and behaviour to improve business performance” [24]. As shown above, the overall circumstances of the humanitarian industry are not conducive to a BPM approach. There are two key driving factors working against the BPM approach and making it difficult for any humanitarian leader to take the issue forwards.

The first reason is the attitude of the donors. Donors are very interested in the overhead costs of humanitarian organizations and see a low overhead cost as a mark of efficiency. A popular charity ratings agency called Charity Navigator [40] evaluates charities on organizational efficiency, giving higher ratings to charities that have lower overheads and more money going directly to programs. This position is compounded by the humanitarian organizations themselves in a race to the bottom on overheads. Médecins Sans Frontières [25] (MSF) is an international, independent, medical humanitarian organization that delivers emergency aid to people affected by armed conflict, epidemics, healthcare exclusion and natural or man-made disasters. In their 2009 annual report, Médecins Sans Frontières advertised a “management, general and administration” figure of 6.3% in 2009 [41]. Oxfam in 2009 expressed their support ratio at 9% in their annual report [42]. This compares with widely accepted figures of overhead in the equivalent commercial sectors of between 15 and 25% [for example see 43].

Unfortunately the development, implementation and improvement of business processes is an overhead (at least in the initial stages). The outcomes of a business process improvement initiative might reduce direct cost on the ground and may mean that more needy people can be helped, but the organization may be punished by donors who see it as an increase in overhead. Fortunately there are enlightened donors such as the Humanitarian Aid department of the European Commission [44] and the UK Department for International Development [45] who have specifically

supported process improvement plans through funding supply chain improvements and improvements to human resource management.

The second reason is the litany of unsuccessful process definition and improvement projects that litter the humanitarian landscape. Projects may consume considerable resources defining and documenting processes, but may never move to the implementation stage because of the costs involved or the infeasibility of business change in worldwide dispersed organizations. When they do move to implementation, the failures become very public. Three examples of these difficulties were recently highlighted in a UN audit report of June 2009 [46]. In one example highlighted in this report the World Health Organization implemented an Oracle ERP along with a radical process improvement plan (including off-shoring key finance processes). This severely disrupted the operation of the organization in a very public way [47]. Is it any wonder that the leaders of humanitarian organizations are wary of the potential risks of business process improvement?

## **2.7 Summary views**

The community reading this paper is probably already convinced that a serious approach to process management is key to success in business. This is not however a very widely held view amongst the stakeholders of the humanitarian community – the donors (with some notable exceptions such as The Fritz Institute [48], ECHO [44] and DFID [45]), the leaders of the humanitarian organizations and many of the front line staff. The very real reasons for this are given above.

There is a reasonable compromise position. It must be accepted that many areas of work for humanitarian organizations are not amenable to a rigid process focus. The systems environment has to support staff in the less rigid process areas such as collaboration, communications and knowledge management.

The corporate services areas such as finance, IT, logistics, fund raising and HR can demonstrate improvement through a successful process based approach. The implementation of frameworks and best practices (such as ITIL), along with a sympathetic approach to the people environment is likely to result in real improvements in quality and efficiency.

The middle ground is where the challenge lies. This includes streams such as project management, case management and volunteer management. In many cases the process and system environment is not seen as an enabler and organizations can be stuck with inefficient systems and unused process documentation.

The private sector has become increasingly involved in humanitarian action over recent years. This is either through corporate social responsibility programs, through private foundations (for example the Susan and Michael Dell Foundation [49] and the Rockefeller Foundation [50]) or through direct employee engagement.

The private sector has a good understanding of the value of processes and the need for overhead; however it is rare for their corporate social responsibility programs to focus in this area. Successful corporate social responsibility programs generally have highly visible and emotive subjects, such as Procter and Gamble's Pampers campaign for vaccinations against maternal and neonatal tetanus [51].

If in contrast, corporate social responsibility programs focused on improving business processes and the IT systems that support them, the impact of such investments could be much more significant. One interesting and innovative approach from the private sector that tackles the issue head on is the proposition from Accenture Development Partnerships [52]. In this model, Accenture provides highly skilled resources into INGOs to work on systems and process improvements. The resources are provided at a heavy discount through contributions made by the company and the employees themselves. Working on such a project is seen as a key part in every employee's career development.

## **3 Process Centric examples in the humanitarian contexts: insights from two cases**

As mentioned above, there are many challenges in implementing a business process approach in international humanitarian organizations. This section illustrates the values and challenges of deriving process centric humanitarian approaches, narrating the experiences of two cases conducted within the International Red Cross.

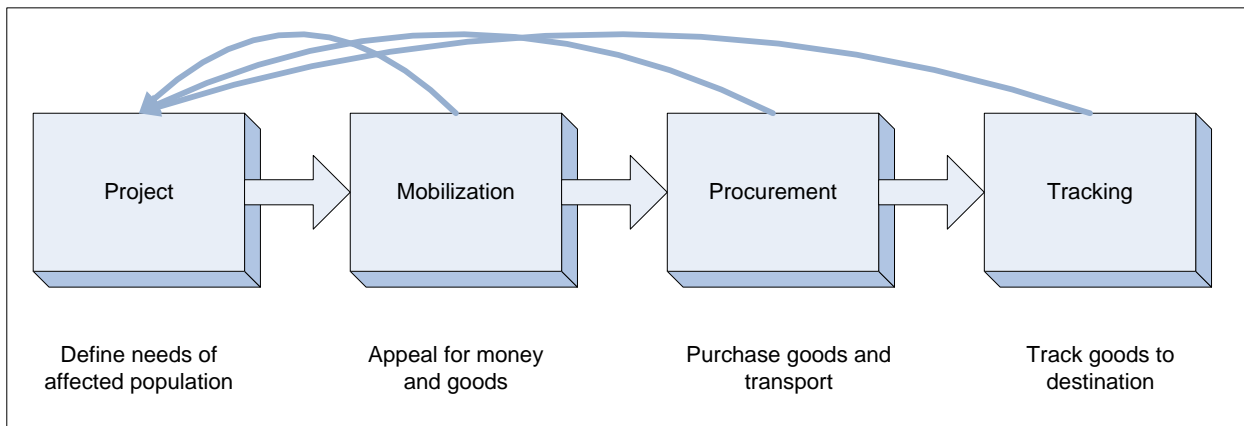
The first case study is an example of the value and success of a humanitarian business process improvement initiative and illustrates a supply chain example at the International Red Cross between 2003 and 2006. It led to a dramatic reduction in costs for supplying assistance packages and was recognized with the European Supply Chain

Excellence Award<sup>5</sup> [53] in 2006 for both the public / not for profit sector and the overall winner for all sectors in that year. This example has previously been documented in detail in [54, 55].

The second case study illustrates the associated challenges of BPM in the humanitarian sector. It describes the approaches to managing volunteers, which is a common requirement within this community. The diversity of situations and approaches makes a business process focus challenging to implement.

### 3.1 Case 1: The humanitarian supply chain initiative by Fritz Institute

The International Red Cross supply chain has many similarities with commercial supply chains, but its processes are sufficiently different that they warrant discussion. The supply chain is one component of the logistics function at the International Red Cross.



**Fig 7:** The humanitarian supply chain at Red Cross

The core value processes in the humanitarian industry start with an assessment of needs (refer to Figure 2). From this, a plan or project is defined and if there are goods required, a project is opened in the supply chain process (refer to Figure 7). The requirements are appealed for, asking donors to support the activities of the agency. The amount of money raised, the goods available from donors and the speed of supply, feed into the project design, providing the field-based staff realistic information on what resources will be available to them and by when. The available goods are then transported to their destinations and tracked on route.

In practice, the expertise and knowledge of the logisticians is critical to a successful response. On hearing of a disaster, staff will promptly estimate the key requirements based on the type of disaster and the location. The procurement and mobilization can be started by the logisticians while the field staff are clarifying actual project needs. For example, an earthquake in a mountainous region will probably require winterized tents and field hospitals, whereas flooding in the tropics would require hygiene kits and water purification for disease control. The processes and systems allow this flexibility, while constraining other areas such as procurement to meet high standards required by many donors.

Prior to 2003 these processes at Red Cross relied on spreadsheets and manual processes in the Geneva office. Constraints were enforced through management oversight and manual sign offs. This provided flexibility and was very efficient, but made consolidated reporting challenging and required that all logistics operations took place in a central office. Thanks to a generous donation from the Fritz Institute [48], a project was initiated with International Red Cross to define and optimize the business processes and build a web based IT system to support these processes. The result was the Humanitarian Logistics System (referred to as HLS) specifically designed to improve the management of the humanitarian supply chain.

HLS is a web based supply chain management system that allows resources to be donated or procured and tracked from source to distribution point in real time. Goods are procured, transported, warehoused and distributed both in regular programs and in response to disasters. Requirements for goods are expressed as a mobilization table, and donors may provide money to purchase the goods or they may provide the goods themselves. HLS manages both procured and donated goods up to the in-country warehouse. HLS first went live in late 2003.

Following the initial project to define business processes and to implement HLS, ongoing emphasis was placed on continuous measurement and optimization of the supply chain [56]. Data within HLS was analysed and process

<sup>5</sup> The European Supply Chain Excellence Awards were launched in 1997 as an initiative to recognize and reward organizations in Europe that demonstrate excellence in their supply chain.

improvement metrics defined [33]. Shortcomings in the data collected were identified and HLS was adapted. HLS is a web based system, which provides a capability to disperse activities in the business process to regions of the world closer to requirements. This was done at IFRC and provided many advantages in terms of cost, speed and local adaptability. At the same time oversight and controls were enforced which is important to maintain donor confidence. This process continues, driven by the evidence of the impact of improvements made so far.

In the five years after HLS was released, the International Red Cross implemented significant process changes and a new supply chain model. The increased complexity of processes required that the whole IT systems architecture be reengineered. The organization was running a set of largely isolated best of breed IT applications. These were unable to support the cross organizational processes and could not provide a consolidated view of performance.

The systems environment was migrated to a service oriented architecture with an enterprise integration bus (EIB) providing the capability to manage the processes as they passed between organizational boundaries (in this case logistics and finance). A data warehouse was also created to consolidate information from many systems and provide a holistic reporting capacity. The changes were far reaching, placing more control in geographically remote centers; optimizing procurement so the suppliers are contracted to supply goods which are neither supplied nor invoiced until they are needed in a disaster; and improving the distribution system so that immediate need stocks are held near to likely disaster locations. The latter change allowed goods to be shipped by road and sea in place of expensive air freight, dramatically reducing the costs of an aid package.

### **3.1.1 Applying the HLS: a tale of three disasters**

This section describes how the HLS positively impacted to support three global disasters. First these disaster situations are presented and then the overall impact is discussed

**The Tsunami in South East Asia (2004):** In December 2004 the tsunami hit, affecting 13 countries and causing approximately 225,000 dead and 1.5 million displaced people [9]. HLS was in operation and provided the systems backbone for the response, ultimately benefitting almost 1 million people with a budget of nearly USD\$600 million. In the first 12 weeks of operations more than 250 full air charters and more than 1,000 forty foot shipping containers were delivered by the International Red Cross. The value of the HLS system and the robust supply chain processes was evident to all stakeholders; while many non government organizations found their logistics systems challenged by the scale and complexity of the operation.

The management at the International Red Cross for the first time had the ability to measure the supply chain from needs to delivery. They could identify the date on which a community need was identified and track when the goods were supplied to meet that need. They could also uncover financial information on a granularity that was not previously possible. This analysis was undertaken following the tsunami, and led to clear definitions of key performance indicators and system improvements to ensure that the process measurements were relevant to agency staff and to the end recipient of aid.

**Earthquake in Pakistan (2005):** On 9th October 2005, an earthquake measuring 7.6 on the Richter scale struck Pakistan with tremors felt across the region from Kabul to Delhi. The affected area of almost 30,000 square kilometers was the size of Belgium. In Pakistan, 73,000 people were killed, and more than 120,000 people injured. Approximately 3.5 million people were made homeless. This was the second significant test for HLS.

The requirements and challenges of the Pakistan earthquake were very different from the tsunami, but the basic business processes of supply chain were the same. The scale of response was similar and the system enhancements allowed the International Red Cross to monitor its response more closely.

**Earthquake in Yogyakarta, Indonesia (2006):** In May 2006, a magnitude 5.9 earthquake struck Yogyakarta in Indonesia. 6000 people were killed, 25,000 injured and 450,000 houses were damaged or destroyed. The International Red Cross mounted the largest response effort, with the supply chain relying on HLS as its key system. The operation was closely reviewed once the work had moved into the recovery phase.

### **3.1.2 Impacts of the HLS: an example of successful process improvement**

The impacts from applying the HLS are depicted through the measurement of the key success metrics in the three disasters are shown in Tables 1, 2 and 3. The figures provided in these tables were derived from an analysis of the data held within HLS, sourced from [55].

**Table 1 – Services provided to affected communities**

	<b>Indonesia Tsunami</b> 100,000 families	<b>Pakistan EQ</b> 95,000 families	<b>Yogyakarta EQ</b> 65,000 families
Families receiving partial package by 2 months	28,021	29,229	53,112
Families receiving full package by 2 months	0	0	42,911
Average number of families served per day	445	555	613
% goods delivered from the that region of the world	13%	68%	100%

**Table 2 – Speed of delivery of humanitarian goods**

	<b>Indonesia Tsunami</b>	<b>Pakistan EQ</b>	<b>Yogyakarta EQ</b>
Days to activate end to end supply chain	18	10	3
Order lead time (requisition to delivery) in days	30	23	16
% of appeal items mobilized & delivered at 2 months	55%	38%	74%
Average distance of relief items (km) to families	11,805	2,962	1,617

**Table 3 – Cost of delivery of humanitarian goods**

	<b>Indonesia Tsunami</b>	<b>Pakistan EQ</b>	<b>Yogyakarta EQ</b>
Operations total costs at 8 months	Not available	55,944,027	10,505,962
% logistics cost (sourced items + transport value)	-	86%	87%
Cost \$US to deliver relief package per family at 2 months	-	824	142
Cost \$US to deliver relief package per family at 8 months	-	450	142

As is evident from the above Tables, the speed and cost of response were dramatically improved. An aid package for a family in the Yogyakarta earthquake cost less than one fifth of the previous cost. Even adjusting for differences in location, this effect was very significant.

The key difference is not, however, the reduction in cost of delivering aid. It is in the improved outcomes for communities struck by disaster. In some cases the improvements mean that more families can be helped through the crisis and in other cases the money saved can be used to expand the scope of the response and recovery effort. In the Yogyakarta earthquake, the budget flexibility provided by reduced supply chain costs allowed a program to be initiated to rebuild destroyed houses. The money paid for building material and support from the Indonesian Red Cross<sup>6</sup> volunteers who assisted in the rebuilding effort.

The example of the HLS has had far reaching impacts inside and outside the International Red Cross. The success in logistics led to an increased focus on processes throughout the organization. A policy, procedures, process (3Ps) repository was created to provide worldwide access to key organizational resources. The process mantra was taken

<sup>6</sup>Known as 'Palang Merah Indonesia'.

up by individual Department heads with for example the IT department implementing an ITIL best practice framework. Finally it drove a re-examination of the core project management processes that ensure delivery of the programs that the organization runs in the areas of disaster relief and community health.

Outside the organization, the importance of the effort was recognized by key donors and partners. A number of organizations started to use International Red Cross logistics capability for a small service fee, based on Red Cross's ability to efficiently manage the whole supply chain and to track goods from purchase to delivery (the system is currently being extended to track goods right up to the final distribution point).

A major donor to the International Red Cross, The Humanitarian Aid department of the European Commission (ECHO) recognized the value that the investment in business processes had delivered. The systems investment by Fritz of no more than \$4M (plus small ongoing operations costs) was delivering \$10s of millions in savings on distribution costs every year. Not only was the aid cheaper, but it was more effective through arriving earlier and there was less opportunity for fraudulent activity – mainly because the HLS system had built in controls to ensure for example that purchases over a certain value had three quotes available.

ECHO continues to invest in business process improvements inside IFRC and offers incentives for other NGOs who receive ECHO funding to use the IFRC service rather than trying to build their own capability (a concept termed the humanitarian procurement centre). The work was also recognized internationally as best practice in supply chain management through with the European Supply Chain award in 2006.

### **3.2 Case 2: Volunteer Management in the Red Cross / Red Crescent**

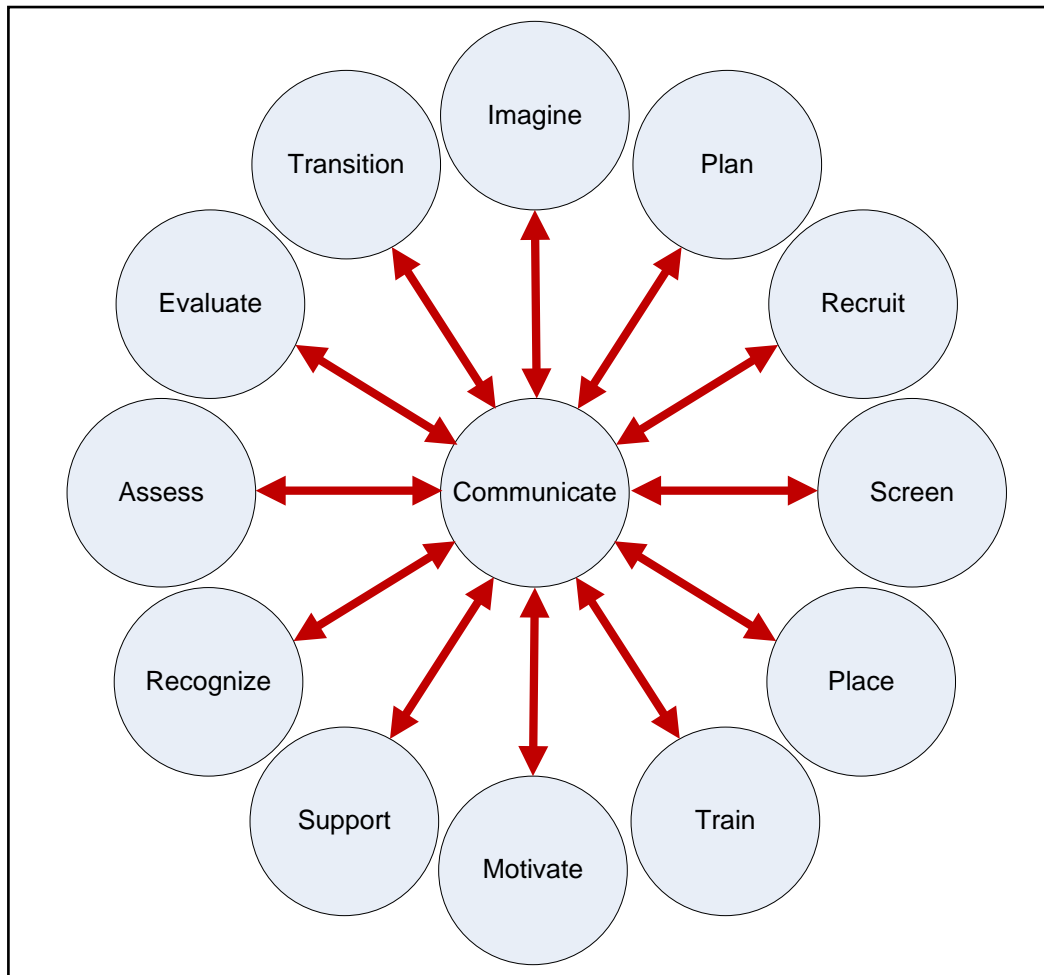
One of the fundamental principles of the Red Cross and Red Crescent Movement is that of volunteering. The movement is estimated to have approximately 17 million volunteers worldwide benefiting vulnerable people and their communities. Indeed the Red Cross and Red Crescent Movement aspire to be one of the leading organizations in mobilizing and managing volunteers to help vulnerable people. To do this it sets out a volunteering policy (see sample Volunteering Policy at [9]) and requires that certain statistics be collected about volunteers and the work that they do. In this case study we demonstrate that a business process approach to volunteer management in the Red Cross has not proven effective.

Within each country, the national Red Cross or Red Crescent Society is responsible for implementing the volunteering policy and collecting and reporting on their work. The national society must follow its own countries laws (for example on the privacy of data) and puts in place structures to manage volunteers according to the IFRC volunteering policy. There are many activities involved with volunteers as shown in Figure 8. Reading Figure 8 from the top bubble in a clockwise direction, we describe the lifecycle of a volunteer. Starting with a vision and a plan of what a volunteer might achieve, the volunteer is recruited, screened, placed, trained, motivated, supported, recognized, assessed, evaluated and if necessary transitioned to a different role or out of the organization. This lifecycle relies on constant communication for success. The diagram deliberately does not depict this lifecycle as a series of process steps, as the application of each bubble and the paths through them may vary considerably depending on circumstances.

These activities must be undertaken within the local context, often by volunteers themselves at the branch level. The circumstances of these volunteers differ immensely around the world – their age, ethnic background, education and motivation differ widely. The physical resources available to them might be substantial in some countries and non-existent in others.

In these circumstances, taking a business process view to volunteer management has not proven effective. There are numerous commercial IT systems that support the processes of volunteer management, but implementing them with all volunteers in a national Red Cross or Red Crescent Society is highly problematic. At branch level, where volunteer management generally takes place, there may be no computing resources and the branch committee members may be unfamiliar with the concepts that are needed to make such systems work.

In general, volunteer management at branch level runs on the basis of knowledgeable volunteers who have been trained on the key requirements. The processes are rarely documented and are different between branches, although checklists and paper based template forms may be used. In some cases local volunteers will construct their own IT systems to support volunteer management, often based on the skills and knowledge of an individual volunteer.



**Fig 8:** Volunteer management activities

Referring to Figure 8, volunteer management is seen as an activity of the individual who is guided by rules and policies and may be supported by systems (as often paper based and electronic). The focus is on clear policy settings and personnel development so that the overall aims of volunteer management are achieved. Identifying and mapping individual process steps has generally not proved to be a worthwhile task.

One consequence of this approach is the considerable difficulty involved in collecting and analyzing statistics about volunteers. The definition of a volunteer may differ between countries and between branches. The records are often paper based and challenging to collect; and branches are much more diligent in adding new volunteers to their records than removing inactive volunteers.

In a recent resolution of the Red Cross General Assembly [57] the definition of key volunteering statistics were harmonized. These will be used to create a global view of the volunteering resources. There is also work ongoing to define the monetary value of volunteers. This might persuade donors that, for certain programs, investment in a volunteer based organization can achieve better outcomes. It may be that these initiatives will strengthen the case for developing solutions to the issues mentioned above and lead to a more consistent approach to business process in volunteer management.

#### **4.0 Conclusions**

This paper has provided an overview of the challenges and opportunities of a business process focused approach within the international humanitarian industry. It has discussed the current status of business process programs, with many obstacles to be overcome to deliver more widespread acceptance of a business process perspective.

The focus in these organizations is on the capability of the individual to achieve outcomes within a local context. Many staff have poor basic IT skills and limited understanding of the value of business processes. This, combined with low investment in supporting IT systems, constrains the application of well defined business processes. The relative lack of metrics and easily measured success outcomes are another challenge.

Well defined, optimized business processes provide an organization with quality in its outputs, productivity of its staff and business information. For the individual staff member, however, business processes constrain their actions and often lead to an overhead from entering data into IT systems. While this data may be important to the organization to fulfill compliance or reporting requirements, the field worker sees it as inefficiencies enforced by headquarters. These perceptions lead to low process compliance and skepticism towards business process improvement projects.

The people focused organization is not unique to the international humanitarian community. Many other organizations such as small to medium enterprises have similar perspectives and challenges with the conventional business process view.

In the opinion of the authors, however, an approach to business processes that recognizes the realities of a people focused organization (Figure 4) could succeed. Processes must support staff in their key motivation, which is to get things done as quickly as possible to alleviate the human suffering that they see around them. Any process design and system implementation must recognize the expectations of users; that systems are there to support them and not just to deliver data to some far distant management entity. The systems must provide immediate value to the user (for example by displaying relevant knowledge depending on the progression of the process), must mimic the current intuitive applications of the internet generations (such as Skype, Facebook and Twitter) and must have a compelling accessibility (for example using local language).

Creating a climate for investment in such systems requires donors who can understand the potential value of optimizing business processes. The ongoing costs of reviewing and optimizing processes and the IT systems that support them must be funded. The rewards from such an investment, would have the potential to improve the lives of vulnerable people far more than directly investing in specific programs in the field.

Insights from this chapter point to a number areas worthy for further investigation, for the progression of BPM and its application in the humanitarian sector. Investigations into the following areas will help to address some of the main issues identified: *How can one measure the success of BPM initiatives within the humanitarian context? How can capabilities be built and sustained within the sector? What IT capabilities are necessary for the adoption and successful conduct of BPM? What are the unique characteristics of people focused (as opposed to task/process focused) organizations? What methods, tools and techniques will be successful in improving the processes of such people focused enterprises?*

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