Future land forces

The logistics will be there on time!

The Army "future Land Forces 2025" project takes place within a process of transformation the purpose of which is to increase significantly the Army's operational efficiency. In order to provide the land forces with the capability to be engaged farther, quicker and more efficiently, they will have to be more deployable than today while keeping a power and a protection level equivalent to the current "heavy" forces. These transformed forces should **consist of task forces particularly suited to first entry operations, well adapted to immediately conduct coercion as well as, and without any discontinuity, violence mastering type of operations.** This ambition is based on the foreseeable progress of technology, in particular in the fields of intelligence, protection, miniaturization, digitization and information systems. It aims at guaranteeing the military action efficiency in spite of the limitation in the size of the committed forces.

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These powerful land forces will implement **new modus operandi made available to them thanks to better information mastery.** Infovalorized operations[1] should bring significant progress in many areas, including:

- Capability to get situation awareness and understanding before the engagement starts;
- Capability to control maneuver tempo;
- Improvement of dialogue and interactivity amongst actors within the battlespace;
- New modes of aggression and deterrence;
- Reinforced and more co-operative type of protection;
- Organizations flexibility and agility.

The deployed forces should be provided with **capabilities enabling them to frequently and quickly change their organization in order to adapt to the changes in mission context, threat and sometimes nature.** More concretely they'll be able to:

- frequently adapt their structure to mission characteristics and implement a modular and re-adjustable type of organization in accordance with the evolution of the situation;
- make decisions about and implement simultaneous and reversible coercion and violence mastering actions in a complex and changing framework within which the intensity of conflict can vary a lot between phases;
- seize, and maintain the initiative, and impose their will on the opponent by means of actions within both material and immaterial domains.

Implementing those capabilities implies that the logistic support function as a whole evolves in such a way that it is able to bring the most adapted types of responses. It is thus necessary to find out which are the tracks that will guarantee permanently the quality of the airland force's logistic support while maintaining the best cost-efficiency ratio, in spite of ever changing operational situations. It is a matter of **conceiving and developing a fully controlled logistic support system that reinforces the combined arms commander's freedom of action, and that is based upon optimized support capabilities.**

Reinforcing freedom of action thanks to an optimization of the logistic support system

New information and communication technologies will enable future combined arms commanders to conceive a type of maneuver characterized by the **successive deployments fluency, and by a better capability to disperse forces and to concentrate the effects.** Mastering the tempo will allow them to shift quickly from violence mastering to brutal combat actions or even to conduct those two types of actions simultaneously.
Since land forces will have acquired a better control on movement, they will become less predictable and less vulnerable to enemy aggression. Thanks to their fire power efficiency and accuracy, they'll be able to impose their will onto the opponent. **But that type of maneuver based on gaining information and decision superiority will only be applicable if combat units can benefit from an efficient and well adapted logistics support.**

Theater command HQ will thus have, as a general mission, to conduct the maneuver of all deployed logistic support elements by decentralizing all or some of its logistical assets and command systems in order to attach them temporarily or not to the tactical echelons that would need them.
The logistic support system could thus be organized in two echelons:

- **an inserted echelon** that would provide contact combat units with a necessary level of autonomy and would initiate re-supply and evacuation requests;
- **a permanent echelon located in a stabilized zone** that will keep the non immediately required stockpiles and will take care of the most constraining logistical operations. This permanent echelon will be able to generate temporary echelons should it become necessary.

Seen from this point of view, the current hierarchy of the logistical echelons (BLIAT[2], BLT[3], BLD[4], TC2[5]) could be revised since it doesn't represent anymore a frozen system but rather a generic type of organization that will have to be permanently adapted to force requirements. As a matter of fact, the current logistic support system allows good tracking and good distribution of the logistic support capabilities, but it makes our system less reactive and perfectly predictable to the opponent.
In order to succeed in their missions, contact combat units must have the necessary resources and capabilities in any circumstances and at the right time. However their actions must not be hampered by too heavy a logistic support organization.
That is the reason why **only specialized logistic modules should be inserted within contact combat units down to the GTIA[6] level,** and even at lower level should the task force be required to operate in compartmented areas (urbanized zones). These modules the composition of which vary in accordance with the operational situation, will be organized and layered in such a way that they could facilitate casualties' survival and the success of the on going action. In addition, they'll provide the combined arms commander with the logistical autonomy required to be able to undertake contingency actions at their level. **All other assets will be kept as much as possible far from the contact zone within a remote and protected logistic echelon** in order to avoid exposing uselessly their capabilities to enemy aggression. In order to avoid a too big dispersion of the logistic specialists, they will be kept in a stabilized zone and will be able to assist the inserted ones, thanks potentially to technical data transmission means (e.g. capability of operating remotely and by video conference).

The combined arms commander is responsible for the tactical maneuver unity while integrating the logistical constraints in it. In liaison with his logistic advisor, he'll have to anticipate and define the needs and level of logistic autonomy required to accomplish the mission; **his role during the conception phase of the logistic support maneuver will thus become more important.** On the other hand, he should be freed from the execution level tasks linked to logistic support since most reports will be automated.
Inserted logistic module personnel will have to have access to the data necessary to the conduct of a type of support that will be transparent for the contact combat units: a direct access to logistic data provided by weapon systems data processing terminals, without having to make any request to the contact combat units commanders. These commanders will only receive the major data synthesis and will only have to be implied in the nonstandard request process.


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In order to avoid encumbering combat units, they'll only receive what is necessary, and these supplies will only be delivered on request (pulled), but they could also be delivered supplies as a compensation for normal consumption, in that case re-supplies would not be pushed anymore according to a rigid planning but rather sent to the location and at the time decided in common by combat and logistic support units.
Thanks to a permanent awareness of the levels of casualties, damages and consumptions, logisticians will be able to timely adapt the logistic organization to the evolution of the situation. In addition they'll be able to detect most dysfunction risks and to propose solutions to the commander in order to avoid them even before those become an actual problem.
A refined awareness of tactical and logistic situation will allow to position logistic support elements and stockpiles at the right place where their maximum efficiency and protection will be the most easily guaranteed.

In addition, and according to the fact that maneuver success depends on both planned actions and contingency opportunities, logisticians must be able to make unplanned efforts within delays that are compatible with the envisioned contingency actions. This requires that, since they cannot maintain expansive reserves or stockpiles, the logisticians should have the possibility to reassign means and resource during the action without putting any unit at risk.
This implies in particular the ability to systematically deliver supplies by air.
It's not easy to reconcile forward force autonomy with the reduction of the weight that might hamper them.
During high intensity phases and in particular initial entry this will only be possible if the requirements for immediate logistic support have been reduced.
The forces in charge of these actions will thus have to use less demanding weapons systems. This requires a particular effort at the time of their conception, especially for regarding reduction of weight and simplification of maintenance operations (logistic embedded in the programs); so that the users can repair themselves and without difficulty most of the technical damages.

It will also be vital to imagine less demanding courses of action, in particular requiring less ammunition. Tomorrow, it will thus be necessary to produce the required effects with very strictly dimensioned means.

A logistic system under permanent control

The adaptation of the logistic support system to the air-**land force engagement conditions places land forces in front of a triple challenge:**
- to acquire more efficiency, i.e. to guarantee the service quality while keeping the costs under control;
- to guarantee service reliability in spite of the emerging threats linked to the new types of conflicts;
- to guarantee high quality service to the forces in spite of the possibility of sudden and major changes of their organization lay out in space as well as in time.

The need to control the costs could result in adopting a direct logistic flow concept, but experience proves that this system is not compatible with operational support requirements. Territorial ruptures, enemy actions, as well as the system of forces' constant adjustments constitute a series of reasons for making illusory the installation of such a system that combat linked risks could make fragile to such a point that it could even cause the main action to fail.

Controlling the costs still remains yet an obligation. It is thus essential to acquire design tools that make it possible to estimate for each operation the level of autonomy required for the deployed force within a very precise time-space framework. This framework could even be further differentiated for each domain of support. Those tools should also allow the evaluation of the size of the theater stockpiles to be built up. Linked to these evaluations, an assessment of the potential risks should also be taken into account and subjected to the decision makers' appreciation. In any event, the land force must have at its disposal such a level of autonomy that it would be capable to carry out the planned operation; it should also be able to deal with certain risks linked to this operation as well as to seize any appropriate opportunity. **It is thus essential to conceive a support system which combines efficiency when using means and resources available with flexibility when servicing the supported units.**

It is probable that **two types of support will have to coexist** in order to respond to all the needs:
- a **centralized type of logistics support, with "pushed" flows,** the characteristics of which are planned, substantial, optimized and presenting strong possibilities for being joint, multinational and for outsourcing (depending on cost analysis);
- on the other hand, a **decentralized type of logistics, coordinated at theatre level, personalized, adaptable, re-adjustable, and both reactive and proactive.** Sufficiently or even slightly more than sufficiently adapted to respond to the requirements, it will be mainly based upon military assets and will be organized to respond to the "customers" needs (this logistic support will mainly depend on the analysis of the expected operational results).

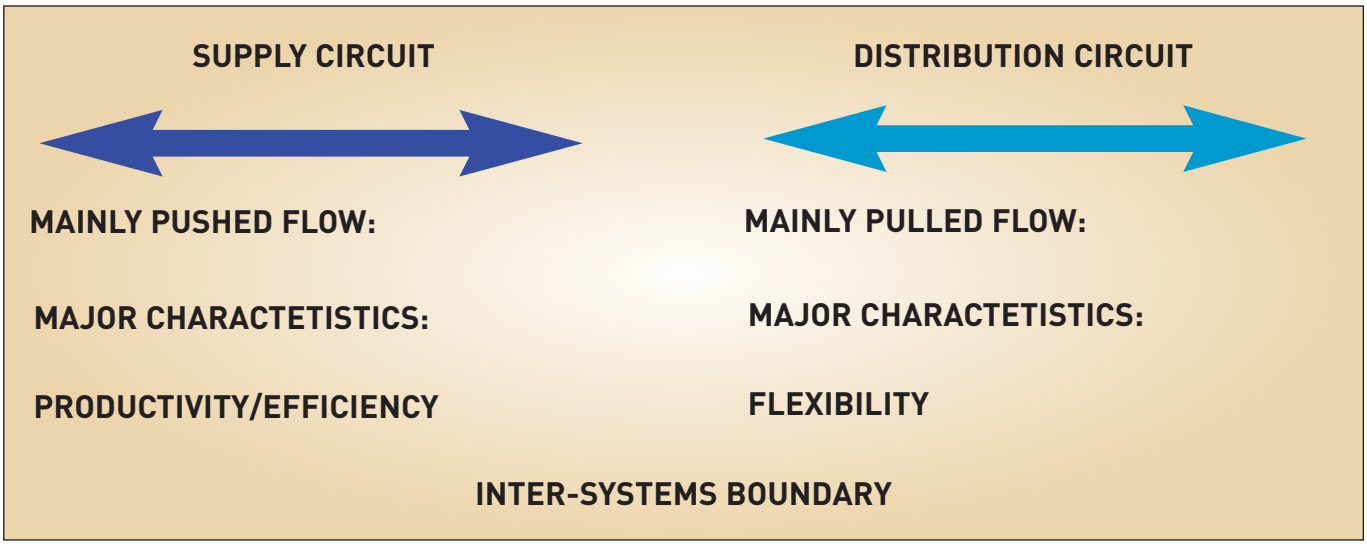
Centralized logistic support will allow the taking into account of the force's generic needs while the decentralized one will be dynamic and adapted to the operations.

The indispensable link between these two complementary systems will require a perfect coordination of the two main actors' shift of role:

- The upstream logistic commander will be responsible for designing and planning at joint level a system that favors anticipation and efficiency;

- The theatre command that will implement a system that favors execution and flexibility.

Centralized logistic support will take into account the force's generic needs while the decentralized one will provide units engaged in operations with the necessary quality of resources.
The response to this challenge relies on the implementation of a management system for the entire logistic chain that does not consist in optimizing each step of

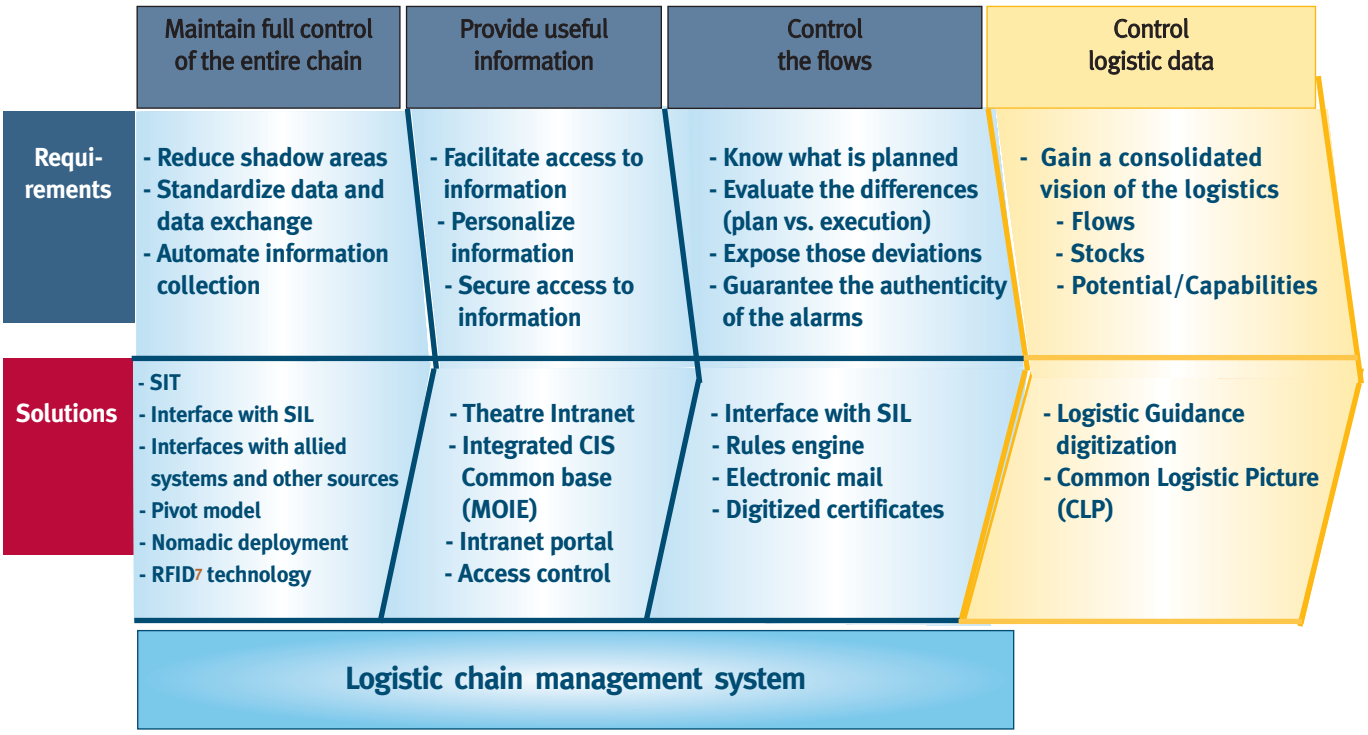


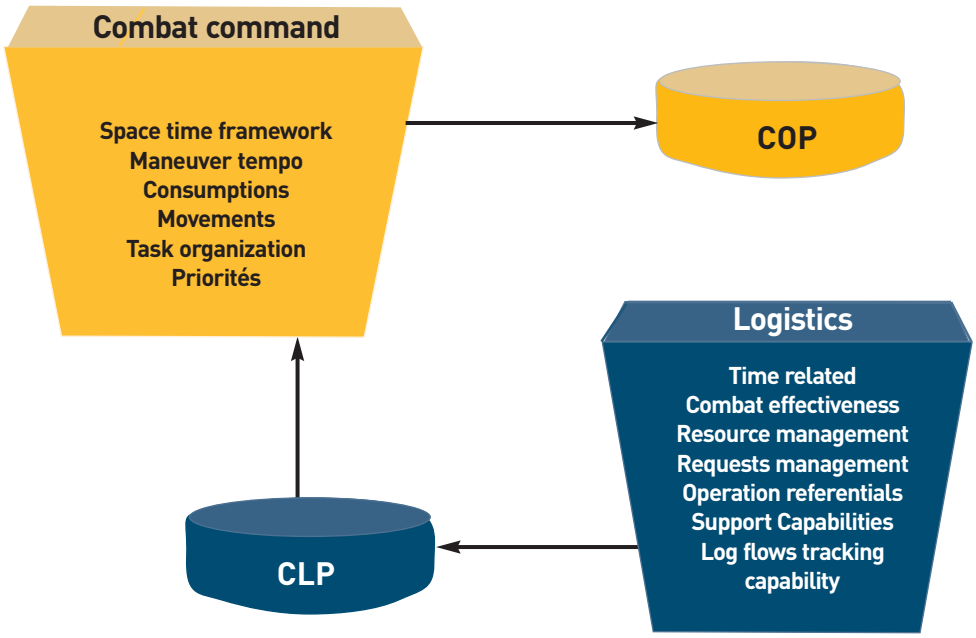
the process independently but rather in looking for a global result at the final customer's level. **One of the main leverage factors to reach that result should thus be the compatibility of all information systems** allowing a better account of the tactical situation by the logisticians and a refined tracking capability of resources and evacuations from beginning to end. Upstream systems will thus include management and planning tools able to talk to theatre systems and that will have the characteristic of being flexible and able to conduct logistic support maneuver in both active and proactive ways.
Then the entry logistic base should not be anymore one of the logistic flow's steps but rather some sort of an automatic gearbox able to support the variations originating from centralized logistics as well as those from the decentralized one. This base will have to be able to present all the conditions necessary to facilitate flows flexibility, i.e. storage capabilities that guarantee resource preservation and their potential redirection back to France without having to add any maintenance or reconditioning operations. The constitution of a theatre stockpile will thus not anymore entail any degradation in time of the stored resource should the force not employing them. These "buffer stockpiles" could include major pieces of equipment intended to resupply forces victim of attrition in order to limit as much as possible in-theatre repair operations.

The implementation of a global management system for the logistics chain that evaluates in real time the differences between what was planned and what is actually executed will allow us to bring quickly any necessary corrective measures and will provide high quality logistics support while improving the combined arms commander's freedom of action.

A control made possible by infovalorizing future logistics

Infovalorization will allow an easy and fast exchange of data between all actors whatever their geographic location or the functional chain to which they belong. The permanent dialogue that will be established between tactical and logistic command levels will provide the logisticians with enough time to anticipate the requirements corresponding to the planned action. During the conduct of the operation, the access to the data provided by the weapons systems in particular the terminal information system (SIT) and the logistic chain global management system will permit real time knowledge of the variations of realization without being obliged systematically to request data from combat echelons. Based upon the common operational picture, it will be possible to create a "common logistic picture" which will allow logisticians to evaluate proactively the logistic consequences of the actions as well as to take corrective measures progressively, and also to define what should be the implementation details that would guarantee the logistic means best efficiency.
In order to facilitate the tracking of the logistic flows (requests, delivery, convoys, etc.) as well as the one of the levels (stocks, spare, equipment, means, etc.), logisticians will have to have deployable logistic information systems. These systems will communicate among themselves and with the SITs thanks to the theatre level internet. In addition they'll provide the C2 CIS with the necessary synthesis of information. C2 CIS will remain common to all forces. They'll be used to command the logistic units and to create the common operational picture that the logisticians will use to anticipate the support requirements.





COP: Common Operational Picture
CLP: Common Logistic Picture

In order to ensure maneuver unity in spite of the rarity as well as the distance of some logistic means from contact units, it will be necessary to develop:

- the capability to design a logistic maneuver that anticipates the requirements, to figure the right levels of logistic autonomy and to position the logistic means at the right location;

- the capability to track the logistics situation in order to be timely aware of customers' requirements, and the logistic system status (consumptions, casualties, damages, flows, stocks, logistic means status and transportation capabilities, etc.);

- the capability to conduct the logistic maneuver by adapting dynamically the support chain to the combatants' requirements and to the chain of command priorities in synchronization with the evolutions of the tactical situation (contingency actions or reactions);

- the support by air of the units that are momentarily isolated;

Inserted logistic support modules will use the same communication and information system as the one of the supported unit. In addition they will have to have a liaison with their functional support chain (i.e. the remote logistic echelon located in stabilized area).

The adaptation of logistic support capabilities to future operations conditions requires also **a reinforcement of the agility, self-defense and protection capabilities of the support modules** that are inserted within the contact combat units. These inserted modules will include medical, maintenance, and transport-supply capabilities.
Each contact unit will thus have a number of medical teams corresponding to the mission requirements.
These teams will be equipped with protected collection and evacuation means. Should they be at risk of being isolated, necessary reinforcement assets could be set up a priori. The relief would be carried out using mobile assets even in urbanized area, and would benefit from a protection equivalent to that of the supported unit. These means need to be able to carry out their relief mission without hampering the combat means, nor should they neutralize the remainder of the contact combat unit.
The contact combat units medical doctors will be able to early categorize casualties, which will make it possible to simplify the collection phase and will save significant time. The medical service will also benefit from new capabilities that will guarantee the best possible survivability for casualties.

Similarly, the inserted maintenance teams will only be dedicated to maintaining equipment readiness when these repairs will be specifically required for the ongoing combat actions. These teams will carry out light interventions and should be able to repair most failures thanks to simple and rapid actions (assistance to diagnosis, exchange of sub-system components, etc.).
Evacuations will be delayed as much as possible and be carried out by specialized units equipped with protected means and that have self-defense capabilities.

Within the framework of force's dynamic actions, it will become necessary that maintenance facilities should be kept away from the contact area, which thanks to their stability will guarantee their safety and efficiency.
As far as supplies are concerned, during the first entry phase, it is vital that units should be granted **sufficient autonomy capability prior to the deployment of the support chain.** This will imply that they'd be provided with a well dimensioned operational supply package that they'll be able to transport and administer autonomously.

Then, and in order to guarantee the efficiency of the supply chain without putting weight on the contact combat units, it will become necessary **to optimize the logistic flows by transporting only what is strictly indispensable to the accomplishment of the current operations and to seize contingency opportunities.** This system must be robust enough since in modern combat the coercion phases are very demanding. The high tempo maneuver that should be permitted by Infovalorization will increase the risks for a rupture of the supply chains.
Thanks to a better dialogue between tactical and logistic echelons and to information sharing, it will thus be possible to constitute in a stable zone - and always away from the contact zone - heterogeneous loading addressed to single "customer" unit.
Containers will be adapted (modularity, divisibility) to the situation of the unit to be supplied, in particular for engagements in urbanized areas.
In addition, modularity and divisibility will permit the loading reorganization that would become necessary to respond to potential GTIAs' reorganization (detachments, attachments) without having to use heavy handling equipment.

Supplies will be then pushed as required towards contact combat units by specialized units that will have sufficient self-defense and protection capabilities. These units will be potentially reinforced by additional protection systems based upon escort units and also by being given high level of priority for intervention, intelligence or fire support.

1 "Infovalorized operations" are those operations where land forces have been able to take the best advantage of their information resources in order to improve their efficiency in both material and immaterial environments. Infovalorized information is characterized by the networking of as many actors as possible, as well as by a stronger capability for collecting, processing and presenting all types of operational data that will thus facilitate a common and timely understanding of the situation (in particular for what regards friendly and neutral parties). Mastering these factors will allow:
- *the timely making of the right decisions,*
- *the co-ordination of well synchronized, accurate, and controlled actions,*
- *better combination and co-ordination of effects.*

2 Joint Theater logistic base.
3 Land Force logistic base.
4 Division Logistic base (or DISCOM).
5 Battalion CSS elements.
6 combined arms tactical task force (Bn TF).
7 Radio frequency Identification.

The effectiveness of future airland forces system will thus depend on its capability to gain and maintain operational superiority, and to produce the effects necessary at the right place and time. That will only be possible if this system is supported by a powerful logistics subsystem.

The **dialogue consolidation and the sharing of information** between tacticians and logisticians as of the phase of planning and throughout the conduct of the operations will build up a synergy which will be beneficial to all actors. **The reinforcement of the inserted support modules agility, self-defense capability and protection** will allow a maximum effectiveness in spite of a heavily hostile environment. This logistic support system which is both proactive and reactive and provides for the contact units requirements by taking into account tactical and organic evolutions, will **contribute to the combined arms commander's freedom of action.**

The implementation of a **logistic system which is controlled from beginning** to end by a **global management system** which reconciles at the same time the best possible management of human and material resource and the satisfaction of the operational needs will be a decisive factor for force survivability long living efficiency.

The process of transformation of our logistics must thus be conducted at the same pace as the one of the core combat units. It would be useless to have modern and infovalorized forces if those did not benefit from a logistics with the same level of performance. Many endeavors that are currently being undertaken go in that direction. It is vital to continue our efforts to make these endeavors a success.