



Roll Back Malaria Partnership

Procurement and Supply Management:
Private Sector Diagnostic

The Boston Consulting Group
Fall 2006

Preface

The Supply workstream was established after the 10th RBM Partnership Board meeting, as an effort to use the Roll Back Malaria (RBM) Partnership as a mechanism to increase the availability of malaria commodities. Analysis focused on determining the appropriate role for the Partnership in:

- increasing the availability and utility of forecasts for public sector demand
- decreasing delays and transaction costs in procurement and supply management
- helping countries strengthen their capacities to procure and absorb commodities.

Given the private sector's competitive sensitivities and the level of dissatisfaction with the RBM Secretariat's then current Malaria Medicines and Supplies Services group, the team of RBM Partners leading this workstream requested that BCG do a formal diagnostic of the private sectors' needs. However, it is important to note that this diagnosis is only one constituency's perspective on a critical issue in which all Partners have a stake; as such, broadening the scope of inputs is necessary in order to determine specific RBM roles and assign responsibilities. Needs and potential solutions should be discussed with other constituencies, including multilaterals, ministries of health, NGOs, and donor organizations.

However, this diagnosis serves as a solid starting point for these decisions and provides insight into what suppliers are recognizing as the key issues and bottlenecks to effectively growing and serving the market consisting of the public sector.

The *interview findings* section is a synthesis of the interviews BCG conducted; supplier needs were either:

- a) offered proactively by suppliers during the interviews *or*
- b) proposed by BCG in the context of the issues being highlighted, and validated by the suppliers

As such, they are direct reflections of the suppliers' perspectives, as opposed to BCG hypotheses or recommendations.

In contrast, the *potential RBM roles* section is based on of BCG's analysis of themes emerging from the interviews, and the application of those themes to frameworks around the comparative advantage of the RBM Partnership, Secretariat, and other Partnership bodies.

Table of Contents

<u>Contents</u>	<u>Page</u>
Scope of Analysis	4
Synthesis of Interview Findings.....	5
Capacity planning	5
Order-delivery cycle	7
Costs.....	9
Competition.....	10
Differences Across Commodity Types.....	12
Potential RBM roles.....	13
Proposed next steps.....	15

Scope of Analysis

In order to complete this diagnosis and identify potential improvements and RBM roles, thorough phone interviews were conducted with individuals from the major manufacturers of malaria commodities, ranging from ACTs, vector control and rapid diagnostic tests (RDTs). Discussion topics included:

- Data, demand forecasting
- Key players and partners
- Method for setting capacity
- Primary bottlenecks in procurement, production
- Opportunities for efficiencies
- Potential economies of scale
- Potential RBM services, solutions

Interviews with ACT suppliers were conducted in the summer, followed by interviews of vector control players and diagnostics manufacturers in November. The companies targeted by BCG included:

ACTs (original focus)

- Glaxo-SmithKline
- Novartis
- Ranbaxy
- Sanofi-Aventis

Vector Control

- Bayer
- BASF
- Siam Dutch
- Sumitomo
- Syngenta
- Vestergaard-Frandsen

Rapid Diagnostic Tests

- ICT Diagnostics
- Omega Diagnostics

After interviews were conducted and a first draft of this analysis had been completed, it was sent back to all interviewees for feedback and validation that it accurately reflected the themes of our discussions. The comments received and questions raised have been integrated into this document.

It would be ideal to expand this diagnostic further through additional conversations with diagnostics manufacturers, and conversations with Chinese ACT manufacturers, African net manufacturers, and raw materials suppliers to ensure all players are represented.

Synthesis of Interview Findings

Overview

Conversations with manufacturers uncovered a series of supply chain issues and unmet private sector needs, critical in the optimal delivery of product to end users. Most of these issues applied across all types of commodity suppliers, and could be categorized into the following four buckets:

1. ***Capacity planning***
The process through which companies scale their operations to meet future demand and procure raw materials for upcoming production
2. ***Order-delivery cycle***
The length of time between when an order is placed and when the product is delivered to the customer
3. ***Costs***
Supply chain costs which either effect suppliers' margins or prices to the customer
4. ***Competition***
The state and nature of the market environment

1. ***Capacity planning***

The inability to confidently and accurately scale operations in anticipation of future demand has serious implications for malaria commodity suppliers and the malaria market in general.

For suppliers, unwillingness to scale operations in anticipation of increased, but uncertain, future demand leaves many manufacturers with under-capacity issues, which precludes them from participating in as many tenders as they otherwise could. On the other hand, expanding capacity too aggressively often forces suppliers to reduce product prices to unprofitable levels or see their oversupply expire in storage.

In the face of these options, suppliers are currently opting for conservative expansion strategies and, as a result, the malaria market is often faced with supply shortages or decreased market competition (and corresponding suboptimal product quality and prices). In turn, the resulting customer uncertainty around commodity availability skews customer behavior, as customers scramble to purchase limited, or what is perceived to be limited, product.

The first major cause of suppliers' capacity planning issues is their perceived lack of reliable public sector demand forecasts. As one supplier put it, "I've heard global demand estimates ranging from 10M-100M nets in the past week alone." Unclear forecasting methods, historical forecasting inaccuracies, and inconsistency across estimates have all left the malaria commodity markets unsure about the level of future demand for their commodities.

Suppliers cite the following challenges in obtaining reliable forecasts:

- No transparent funding numbers aggregated by country or commodity (other than GFATM, they are unavailable or difficult to find)
- Disbursements from aid agencies are uncertain and/or occur ad hoc
- Custom specs for nets vary across countries, requiring country-level forecasting for advance planning

Therefore, to help create a higher level of reliability in forecasting, suppliers express the following needs:

- Transparency around forecasting assumptions, methods, and data sources
- Annual data on funds approved and disbursed by commodity, updated quarterly
- Forecasts rolled up from *country-level* data on both total demand and funding available

These types of information would help suppliers more confidently and accurately scale production to meet future market demand and enable suppliers to form better judgments on the accuracy of the forecasts being provided.

Suppliers' tendency not to perform their own independent forecasting is a parallel issue, which explains in part why shortcomings in public sector forecasting are such a large concern. Independent forecasting has faltered for the reasons listed above, but also due to:

- Lack of resources - companies are either unable or unwilling to dedicate the necessary time and effort required to calculate accurate forecasts
- Lack of transparency into country implementation plans

Easier access to these implementation plans, along with the funding transparency outlined above, could potentially enable companies to forecast demand on their own behalves. Another way these forecasting gaps could be alleviated is through longer term, rolling order arrangements between suppliers and countries. If such arrangements could replace some of the large and uncertain orders that are the standard today, the need for better market forecasting would be somewhat eased.

In addition to data availability and reliability, the timing with which existing forecasts are made available has historically proved problematic for ACT manufacturers in particular, due to the particularly long lead-time for raw materials. Orders for artemisinin must be placed 16 months in advance of production, so without an early indication of demand, ACT manufacturers are required to take on additional risk. In addition, artemisinin growers are making decisions about their own future capacity, and are likely to redeploy that growing capacity to other crops if demand isn't strong enough, thus limiting the long-term availability of raw materials.

A longer-term and broader issue in capacity planning is the uncertainty around the evolution of the malaria commodity market in general, due to:

- Inconsistent absorption of new technologies across countries
- Lack of transparency around long-term country plans
- Uncertainty about the long-term availability of external funds for malaria

There are sentiments that large, reasonable developments in the malaria markets such as the success or failure of widespread ACT adoption and absorption, the possibility of a successful malaria vaccine, or the waning of the current public excitement around malaria efforts, could occur. Any such events would have serious implications on the long-term malaria market, and makes companies reluctant to make the capital investments necessary to adequately supply the market in the nearer term.

Some public sector services that could help address this issue include:

- Education of countries on available technologies and their proper use
- Advocacy to keep malaria high on funding agenda
- Technical assistance to help countries win / effectively implement grants

While some of these services are being provided currently, their continued or increased emphasis going forward are critical to the industry, particularly in terms of long-term capacity planning.

2. Order-delivery cycle

There are a number of issues which prevent suppliers from being able to deliver orders within the time window requested by customers.. These issues range from process steps which occur even *before* an order is placed all the way through to product delivery.

Inability to meet the timing requirements of customers can prevent suppliers from participating in as many tenders as they otherwise could. Alternatively, when suppliers do participate in bids, they are sometimes forced to expedite delivery in order to meet delivery deadlines. This erodes their margins making their business less sustainable.

Time issues can affect the consumers of malaria commodity supplies in very serious ways. In addition to limiting the range of supplier selection for countries and raising prices as suppliers hedge their risk of having to expedite delivery to meet orders, supply delays can mean that commodities are not delivered in time for peak malaria seasons causing at-risk populations to go unprotected, or worse, untreated. Although suppliers did not mention the impact order-delivery cycle issues have on the prices they set, one could imagine that suppliers would tend to keep prices artificially high to hedge against unforeseen costs.

An inefficient tendering process is one issue that suppliers often cite, which slows down the supply chain and often leads to delays in product delivery. According to suppliers, the country officials who serve as tendering agents are often inexperienced and step into the role ad hoc. As such, the tendering process varies significantly from country to country and is often less than structured.

Suggested solutions to this issue include the following possibilities, all of which aim to standardize and strengthen procurement:

- Trained individuals in tendering role in-country, who are able to exert influence
- Standardized tendering process across countries

- Challenging to achieve given the number of different rules that currently exist (e.g., World Bank, US, EU, United Nations), and will proliferate as more and more production moves to Africa
- Oversight to ensure efficient practices, which would require that a set of indicators be developed to flag issues

Another problem often leading to delayed product delivery is the large, last-minute nature of country orders. Orders are often not placed by countries until right before the product is needed, due to last minute disbursements from aid agencies, and because of the ‘use it or lose it’ grant policy. Politicking often occurs within countries around how to use aid money until right before the usage deadline, causing large, sporadic orders. As one net manufacturer put it, “We often receive orders only a month before required delivery. So we either have to make the country wait, or give them standardized nets that don’t meet their product and labeling specs.”

Short lead-times are exacerbated by the fact that net manufacturers are typically unwilling to start manufacturing until they receive payment. This need to have payment in hand results from the following:

- High costs of carrying inventory prohibit companies from manufacturing to stock
- Customization required by countries based on language and design preferences
- Historical unreliability among ministries and local agents; larger corporations don’t deem these customers credit-worthy

Suppliers cite several systemic changes that they believe would help alleviate the issues around the order-delivery cycle. These include:

- Donors disbursing grants further in advance of country’s need for commodity delivery
- Countries spreading demand out over several orders
 - Would likely for donors to disburse grants in installments, rather than lump sums, or to loosen restrictions on the deadlines for grant dollars to be spent
- Countries entering into longer-term supplier agreements

Another proposed solution, which would also help limit the number of layers in the supply chain and, thus, reduce prices, is the idea of a managed order system at a global organization. This system would be designed to streamline the movement of funds, minimizing the number of transfers by issuing payment on behalf of countries. Centralized decision-making is generally *not* preferred, as suppliers worry it would consolidate decision-making power beyond desirable levels. However, a centralized pool of funds and efficient, standardized practices for executing orders at countries’ request is something that suppliers have requested across the board.

In addition to tendering and procurement, registration processes have also been highlighted by suppliers as a place where efficiency improvements can and should be made. Suppliers find individual country registration and WHOPES approval/WHO pre-qualification processes lengthy and often redundant, due to the fact that the processes have similar aims yet individual country registrations don’t leverage WHOPES data or share timelines .

To cut down on the significant time lapse caused by the various registration processes, suppliers have suggested:

- More frequent procurement decisions “subject to approval”, so product can start moving while official approval processes
 - e.g., UNICEF purchased PermaNet prior to WHOPEs approval, and simply did not guarantee that the net would not need to be retreated
 - Would require buyers to establish clear parameters for bringing new projects into play
- WHO coordination with countries to help eliminate overlap and speed country registration

Some suppliers suggest that countries should just accept WHOPEs approval or WHO pre-qualifications in lieu of registration, given its stringency and WHO’s mandate to serve as the global health expert. Others feel that country registration should be the primary approval channel, and that the malaria community puts too much stock in WHOPEs. In practice, the processes serve different functions and neither is likely to cease; however, some additional coordination, delineation, and transparency of responsibilities between them could go a long way in streamlining the system.

3. *Costs*

Unnecessary costs in the supply chain can lead to decreased supplier margins and/or increased consumer prices.

This issue has very straightforward effects on suppliers and consumers. Decreased margins mean a less sustainable, more fragile business model for manufacturers while increased consumer prices will limit quantities able to be purchased by countries, which only have a fixed amount of funding to spend; however, despite their differences, both ultimately lead to decreased coverage.

The issues discussed previously around order-delivery cycles (i.e. delays in bidding, ordering, and procurement) can affect costs as well as time to market. Many times, suppliers are forced to expedite shipping, due to:

- Promises suppliers make in the tendering process, to deliver product by requested date; create costs when made due to a desire to win the bid, rather than capacity or cash flow realities or prior to delays outside of suppliers’ control
- Speed being one of the few dimensions along which suppliers can differentiate themselves. As one supplier put it, “Responsiveness is where suppliers win, but often at the expense of margins.”

Since delays are at the root of this problem, any antidote which addresses time issues would also alleviate this problem. Managed procurement, extended order times, and more standardized processes in general, would once again be of help.

The crowded supply chain, also mentioned in the order-delivery cycle, is a cost factor as well. Lack of expertise within health ministries and lack of supplier relationships with customers

often result in the enlisting of local agents or additional external help. Each of the many players needs to make a margin, and as a result the manufacturers and/or customers get squeezed. Managed procurement, or potentially technical assistance for countries from the public sector, could help shorten this chain by limiting the number of transactions and geographies involved in placing an order.

For net manufacturers, a third issue at play is product customization. Product and labels often must be tailored by country due to language, religious beliefs, customs, and other national preferences. This reduces the scale cost benefits that would otherwise be associated with mass, streamlined production. Where appropriate, increased tolerance of a small set of standard specifications is the ideal solution to this issue (for example, a single label in *all* languages). Largely however, customization cannot be avoided; suppliers expressed that public database of country-specific product specifications based on historical orders could help them better prepare for differences between orders.

4. *Competition*

Uncompetitive bidding and a limited number of sizable players negatively impacts the malaria commodity market in a number of ways. Uncompetitive bidding renders suppliers unable to meaningfully compete on price or quality, while both imperfect bidding and a small universe of competitors reduce incentives to innovate. As a result, the market is faced with limited choices, inconsistent quality control, and potentially higher prices.

It is interesting that *suppliers* have been highlighting the need for more competition in the marketplace. The best justification for this is that, whether operating on a for-profit or no-profit/no-loss model, manufacturers of malaria commodities are generally concerned with the overall state of malaria control and recognize that a fairer, more competitive environment will benefit the markets being served.

One factor limiting competition is that in some cases tender specs are being written so specifically that only one bidder can possibly win. Inexperienced country officials standing in as tendering or procurement agents can be susceptible to guidance and influence from a single supplier. To remedy these cases, suppliers have suggested:

- Trained individuals in-country, who are able to exert influence and facilitate sound procurement processes
- Deployment of Standardized or best-practice processes across countries
- Oversight from the public sector to ensure fair practices

Although some customers, such as UNICEF, do not use open tenders for each new order, which means new commodities are not invited to participate, this was surprisingly not introduced by manufacturers as an issue.

High barriers to entry also exist in the malaria commodity markets, for two major reasons:

- Lack of capital and technology knowledge has prevented the creation of more African manufacturers

- Relatively low margins discourage other big multinationals from participating in the market

One supplier, particularly keen on this point, says, “There aren’t nearly enough people talking about technology transfers -- *that* is how suppliers can truly increase market effectiveness.” They believe an open source manufacturing process could open up certain malaria commodity markets significantly, and if the public sector facilitates the process and identifies the right set of partners to facilitate technology transfers, more malaria solutions could be put on the ground, close to where they are needed.

Lastly, a lack of infrastructure and awareness in countries and little to no ongoing quality control after the registration processes makes relationships more salient than product quality. As a result, manufacturers are compelled to focus their investment and efforts in marketing and on-the-ground relationship building, instead of innovation and quality as product differentiators. As one company states, “Our on-the-ground network is our biggest advantage in Africa. The lack of infrastructure makes this the only reliable way to get accurate data and win customers.”

More public sector education and country infrastructure building could potentially help enable countries absorb new technologies more quickly. Additionally, more on-the-ground quality control mechanisms following registration could force more price and quality competition and decrease the importance of marketing.

One topic that surprisingly didn’t come up in supplier discussions is the private market, which causes a high level of uncertainty around forecasting; manufactures don’t know what percent of need and/or purchase intent will be absorbed by the private market. In addition, counterfeit or fake medications are a primary issue for manufactures.

Differences Across Commodity Types

While most issues apply across commodities, the unique characteristics and landscapes of the different businesses highlight different issues for each commodity type.

ACTs

The capital-intensive production facilities, long lead-times for artemisinin, and uncertain timing around drug policy changes make **capacity planning** the critical issue for ACT manufacturers. Weaknesses in **country supply management and infrastructure** are also of particular impact to ACT manufacturers, since these issues often debilitate the uptake of new drugs and treatment protocols.

Vector Control

For net manufacturers, the voluminous nature of their product and the high variance in product and packaging specs prevent suppliers from manufacturing to stock. This magnifies the problem of **insufficient order lead time**, often preventing companies to be able to deliver product within the window required by countries. UNICEF is currently working on establishing a buffer supply of nets, for which they will charge a premium; however, the possibility that prices will drop while the nets are in inventory makes this a somewhat risky program.

In addition, **lack of procurement expertise** in countries creates frequent reliance on suppliers to guide the process and often enables suppliers to steer tender specs in their own favor, decreasing market competition.

Diagnostics

Adoption of ACTs should cause a significant increase in demand for RDTs, but the timing of this uptake is very uncertain, bringing **capacity planning** issues to the forefront of the diagnostics market. Furthermore, **lack of quality assurance and public education** has led to skepticism of the product category as a whole, despite the differentiation in quality between various manufacturers' products, and limited both appropriate competition between suppliers and, ultimately, demand

Potential RBM roles to address suppliers' needs

(for discussion by the RBM Procurement and Supply Management Working Group)

Across the issues of capacity planning, the order-delivery cycle, costs and competition, the following five needs emerged:

1. Access to market information
2. Simple and transparent forecasting
3. Standardized processes
4. Streamlined supply chain
5. Technology transfers

BCG identified potential roles for RBM in addressing suppliers' needs by comparing those needs to the core competencies or natural advantages of partnership. The Roll Back Malaria Partnership is uniquely suited to perform a role or activity that in cases where one or more of the following is true:

- Conflicts of interest arise from having activity performed by individual actor – neutrality is required
- A single, standardized approach is required
- Performing the activity requires identifying gaps / improvement opportunities across the system
- Credibility is increased by having the activity performed by collective

As such, potential RBM roles to address the five needs areas are as follows:

1. Access to market information

Roles include:

- Compiling country plans and implementation schedules
- Aggregating public funding numbers by country & commodity type
- Publicizing countries' historical product preferences

Effectively fulfilling those roles requires:

- Access to comprehensive and current market data:
 - Country implementation plans, historical figures, product specs, etc.
 - Funds approved and disbursed per country & commodity type

2. Simple and transparent forecasting

Roles include:

- Forecasting actual demand, based on country-level data
 - Clearly communicating assumptions and highlighting uncertainties
 - Forecasting using *both* funding supply and country demand

Effectively fulfilling those roles requires:

- Access to market data (see above category)
- Visibility into the quality of country data
- Visibility into the methodologies for gathering country data
- Visibility into country implementation plans

- Ability to build consensus on forecasting methodology used

3. Standardized processes

Roles include:

- Making country registration processes more consistent
 - Advocate for countries to leverage and coordinate processes with WHOPEs
- Promoting generalized tender specs to increase competitive bidding
- Training tendering and procurement agents to improve processes
- Providing oversight to ensure fair processes, encourage good practices

Effectively fulfilling those roles requires:

- Mandate to develop and/or promote standard practices and guidelines
- Good understanding of current country tendering and procurement processes
- Ability to provide or coordinate delivery of technical expertise

4. Streamlined supply chain

Roles include:

- Facilitate building of managed order system for procurement, maintaining decentralized decision-making
- Facilitate development of a financial guarantee from donor organizations allowing supplier production prior to receipt of payment

Effectively fulfilling those roles requires:

- Ability to represent all donors (on issues such as central tendering and direct payment)
- Expertise in areas of procurement and country financial aid management

5. Technology transfers

Roles include:

- Identify and convene players to transfer technology and partner know-how to new manufacturing ventures in Africa

Effectively fulfilling those roles requires:

- Neutrality; no allegiance to any particular supplier(s) or country(ies)
- Links to networks of capabilities and interests on global- and country-levels

It is worth noting that many of the potential roles for RBM are at odds with each other, insofar as they simultaneously represent efforts to strengthen in-country capabilities and efforts to centralize information and operations globally. To that end, roles for RBM need to be selected with an eye towards timing and sequencing, so as to distinguish between the end-state and interim options for improvements in procurement and supply chain management.

Proposed next steps

A number of additional steps are required to move from the current diagnostic to a point where RBM assigns roles and responsibilities to address identified supplier needs. The workstream suggests the following as critical next steps in this process:

1. Expand this diagnostic to include a wider cross-section of the private sector, potentially including:
 - Chinese and Indian ACT manufacturers
 - African net manufacturers
 - Additional diagnostics manufacturers
 - Raw materials suppliers
 - Private sector members focused on malaria for workforce protection purposes
2. Discuss needs and potential solutions with other constituencies and players e.g.,
 - Multilaterals (e.g., UNICEF and WHO)
 - Ministries of Health
 - NGOs
 - Donors
3. Prioritize proposed solutions
 - Project impact on malaria community, if solutions implemented successfully
4. Flesh out potential RBM role with the Secretariat
 1. Determine how solutions would best be delivered by RBM; options include:
 - By a body of the Partnership (e.g., Secretariat, Working Group, or Sub-Regional Network)
 - By a single Partner organization
 - With the explicit understanding of the broader set of Partners
 - In consultation with the broader set of Partners
 - Providing full transparency into approach and outcomes
 2. Estimate resource requirements
 3. Design role for the Secretariat
 - Develop staffing profiles and implementation plan, with high Partner involvement