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Notes
Marked by vendor as confidential, Internal Use Only."this report is confidential and intended solely for use and information fo the the client to whom it is addressed. But quite freely available to UNICEF etc. See related . report to the Executve Board on 03 October 1994

Print Name of Person Submit Images	**Signature of Person Submit**	*Number of images without cover*
JOHN MANFREDI	John Manfredi	20

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XI. INFORMATION SYSTEMS

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Background...

THE MIS PROGRAMME APPEARS FRAGMENTED, INADEQUATELY CONDITIONED BY STRATEGIC PRIORITIES

- "One of our biggest weaknesses is our information system. I hate to say it. Our people are trying, but there are frontiers we just don't come close to. We need a much broader sense of our information potential. Why do we have to be constrained to old-line thinking? Our systems are fragmented and don't talk to each to her. We do not have an executive information system. We really have a LONG way to go!"

  Top-level Secretariat Director

- "We need a full overhaul of our technology position. Today technology advisors focus on GFSS, the global field support system, but so much more is relevant. The most obvious example is E-mail. Given how geographically scattered we are, this technology is under-utilized."   Middle Manager

- "Computerization of field offices is almost universal. The planning and coordination of these activities still need further improvement. The role of Information Resource Management in the control of software development globally is unclear. The development of software continues to go on in various offices without ensuring that there is no duplication of efforts. Systems are also developed without compatibility and consistency with other corporate systems, another example of wastage."
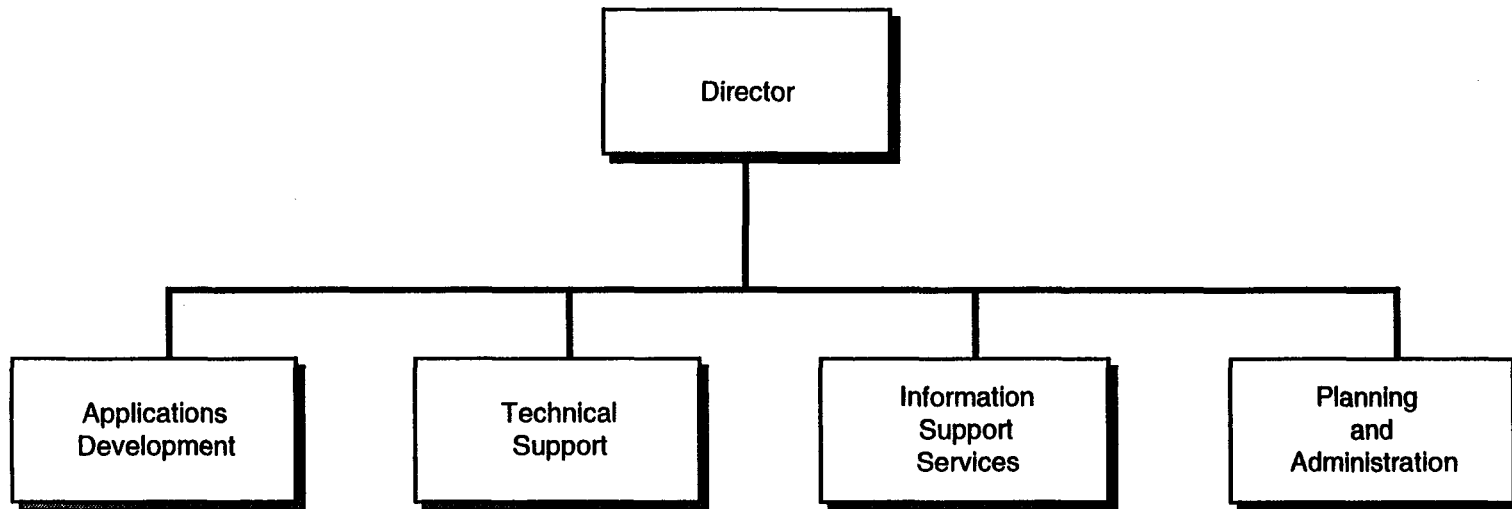
  Internal Audit

OUR EXAMINATION OF SYSTEMS ISSUES FOCUSED ON THE FOLLOWING ITEMS

- Structure

- Spending

- Processes and Procedures

  - Project Management – Cost and Scope
  - Internal Business Processes

Organization...

SYSTEMS STAFF IN NEW YORK ARE SPLIT INTO FOUR WORKING GROUPS; OTHER HEADQUARTER LOCATIONS AND FIELD OFFICES HAVE INTERNAL SYSTEMS SUPPORT

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Other systems units within UNICEF:

- GCO
- Geneva
- Copenhagen
- Field offices (with a minimum of about 30 people)
- Headquarters non-IRM (a post or two in other divisions)

INVESTMENTS IN DEVELOPING AND MAINTAINING SYSTEMS EXIST THROUGHOUT THE ORGANIZATION — UTILIZING 240 STAFF AND CONSUMING APPROXIMATELY $30 MILLION IN 1994 — ROI IS IN DOUBT

1994 STAFF**

HEADCOUNT

1994 BUDGET ALLOTMENTS

DOLLARS
(In Millions)
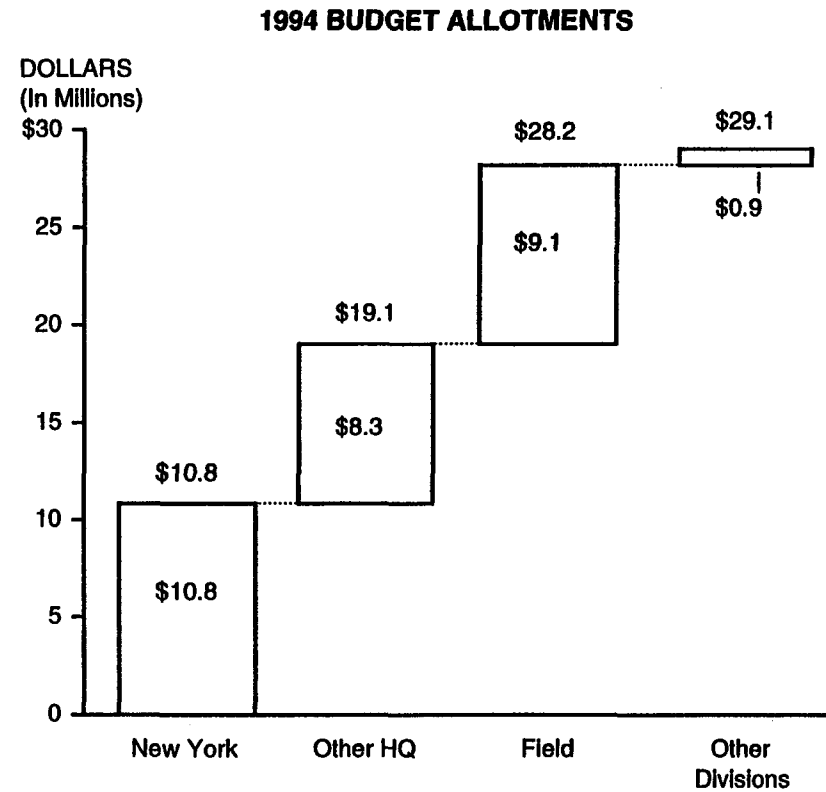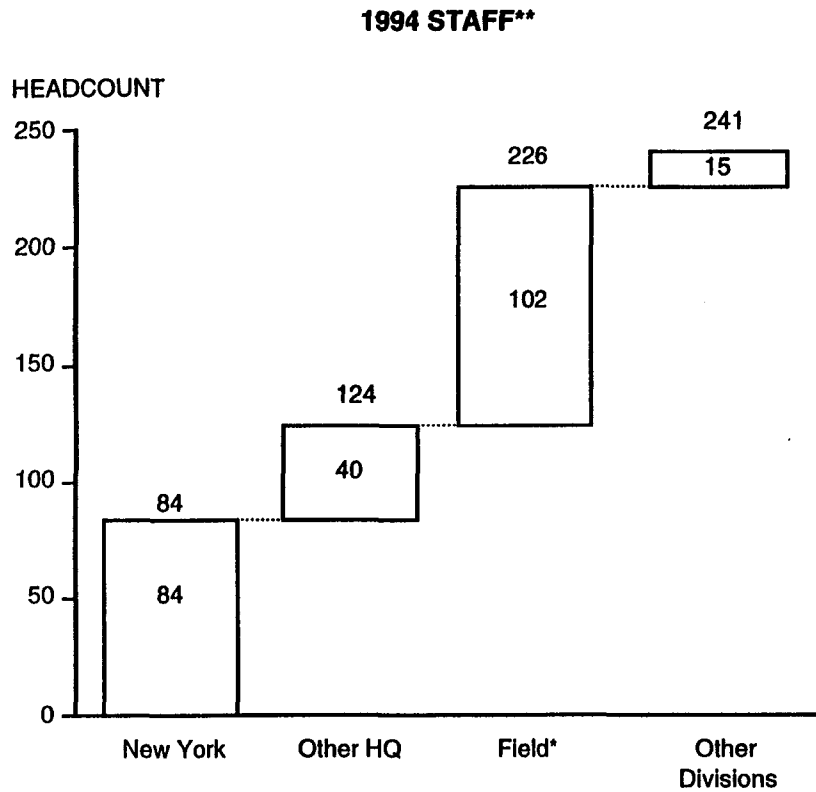
* Includes only field staff recognized as full-time
IRM-type staff
** As of July 1994
Source: Staff—Post Authorization Table, IRM Interviews
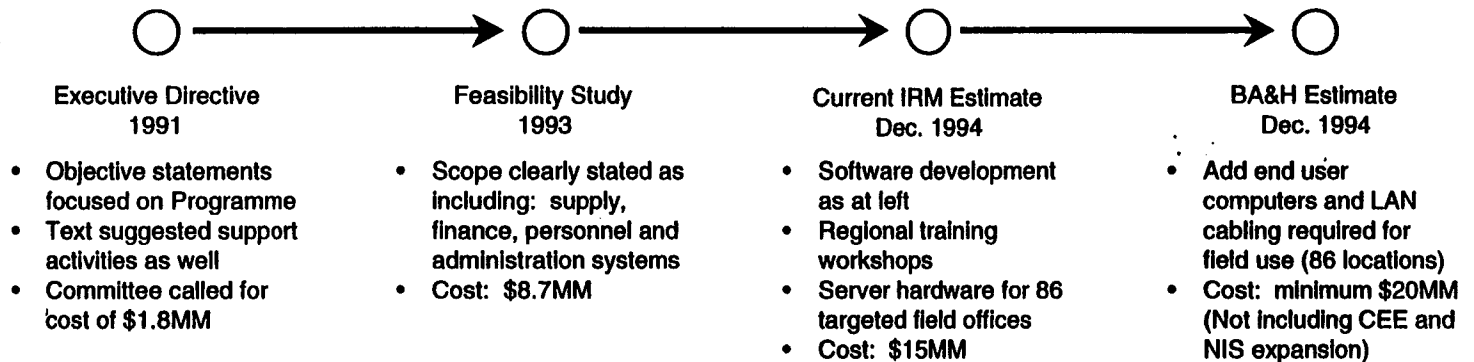Budget—Budget Section, IRM Division Documentation
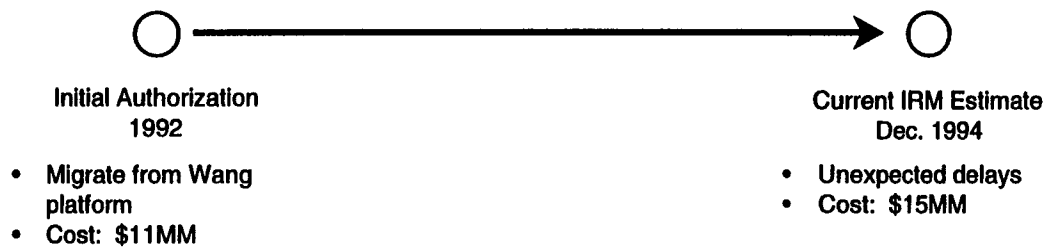
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IRM ATTENTION IS FOCUSED ON TWO MAJOR INITIATIVES WHOSE SCOPE AND COST HAVE GREATLY EXPANDED

EVOLUTION OF PROJECT SCOPE AND COSTS

PROGRAMME MANAGER

○ ────────▶ ○ ────────▶ ○ ────────▶ ○

Executive Directive 1991	Feasibility Study 1993	Current IRM Estimate Dec. 1994	BA&H Estimate Dec. 1994
• Objective statements focused on Programme • Text suggested support activities as well • Committee called for cost of $1.8MM	• Scope clearly stated as including: supply, finance, personnel and administration systems • Cost: $8.7MM	• Software development as at left • Regional training workshops • Server hardware for 86 targeted field offices • Cost: $15MM	• Add end user computers and LAN cabling required for field use (86 locations) • Cost: minimum $20MM (Not including CEE and NIS expansion)

MIGRATION

○ ────────────────────▶ ○

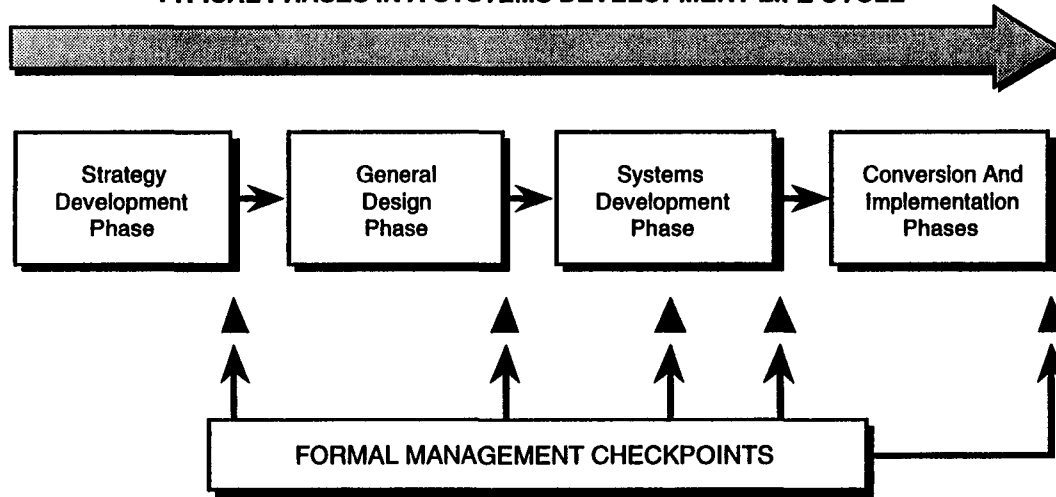| Initial Authorization 1992	Current IRM Estimate Dec. 1994
• Migrate from Wang platform • Cost: $11MM	• Unexpected delays • Cost: $15MM

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THE COST, SCOPE AND DEVELOPMENT SCHEDULES OF THESE TWO MAJOR SYSTEMS INITIATIVES HAVE NOT BEEN CONTROLLED EFFECTIVELY BY MANAGEMENT

ILLUSTRATIVE

SENIOR MANAGEMENT INVOLVEMENT IN MAJOR SYSTEMS INITIATIVES

TYPICAL PHASES IN A SYSTEMS DEVELOPMENT LIFE CYCLE

Strategy Development Phase	General Design Phase	Systems Development Phase	Conversion And Implementation Phases

FORMAL MANAGEMENT CHECKPOINTS

• Confirm scope is consistent with stated business objectives

• Evaluate development costs

– Senior management approval of funding for the next development phase
– Senior management awareness of total project costs

• Confirm the business justification for preceding with the systems development project

– Assess quantifiable benefits as appropriate
– Assess qualitative benefits

UNICEF APPROACH

• IRMAC management reviews scheduled regularly

– General status and coordination
– Not a very challenging review, described as "easy"

• Cost issues are addressed separately in budget subcommittees

• Linkage of cost implications to management decisions is difficult

THE SCOPE OF PROGRAMME MANAGER HAS INCREASED OVER THE LAST THREE YEARS, WHICH COULD BE A MAJOR CONTRIBUTOR TO HIGHER COSTS AND SCHEDULE DELAYS

- Some in Programme Division contend (rightly or wrongly) that "programme manager has been hijacked" in order to justify additional systems development projects

- Original Executive Directive (1991) stated two objectives for Programme Manager:
    - Ability to monitor goals resulting from the 1990 Summit for Children
    - Efficient access to country programme information for use by Field and Headquarters

- Subsequent Feasibility Task Force expanded the concept to include "all functions required to fully operate a Field office", but the methods of that group have been questioned
    - Claimed that the scope expansion was necessary to satisfy field offices, but some saw as an attempt to increase systems development projects
    - Lack of strong senior leadership on this project created an environment where individuals could operate independently with little checking or accountability
    - This new scope was accepted, but there is little evidence of any informed decisionmaking process, addressing costs, benefits and tradeoffs

- Currently the scope of the Programme Manager includes a broad range of systems:
    - Programme systems
    - Supply systems
    - Finance systems
    - Human Resource systems
    - Administrative & Support systems

- Divisional staff discussed a series of new sub-systems (e.g., Non-Expendable Property) which also have been funded/developed within the Programme Manager initiative

FOR THE MIGRATION PROJECT, THE REVIEW TEAM AGREES WITH THE PLAN TO MIGRATE FROM THE WANG PLATFORM BUT IS CONCERNED THAT COSTS MAY BE EXCESSIVE

- Migration to client/server is being undertaken in response to Wang Corporation's change in business strategy – they are exiting the business systems marketplace
    - Project started in 1992 and is forecast to be completed in 1997
    - Budget authorization is approximately $11 million during 1993-1995
    - IRM estimates that an additional $4-5 million will be required through 1997 to complete the project

- At issue is the scope/cost of the work being funded within the Migration Project
    - IRM is "re-engineering" the Wang-based business systems as they are migrating to the new computer hardware platform, in part due to the particular new platforms selected
    - A re-engineering strategy for business systems is conventionally pursued when there are significant "gaps" in the features and functionality provided by an installed business system
    - IRM does not estimate/track costs associated with "re-engineering versus migration"
    - However, the $11-15 million cost estimate appears significantly higher than normally would be expected to migrate the business systems that are currently operating on Wang hardware

- Additionally, the time requirement is of concern
    - Wang Corporation is emerging from bankruptcy and has officially exited the business systems hardware arena
    - The length of time associated with Migration project extends UNICEF's reliance on Wang and thereby increases business risk

THESE TWO PROJECTS CONSUME MUCH OF IRM'S CAPACITY; OTHER IMPORTANT SYSTEMS INITIATIVES ARE BEING NEGLECTED DUE TO A LACK OF RESOURCES AND STRATEGIC DIRECTION

AREA	COMMENTS AND QUOTES
Text-Based Systems for Information Exchange	• "UNICEF is a text-based organization... we develop papers" • Lack of staff resources precludes IRM addressing this critical need • Impossible in the current environment to effectively utilize electronic, text-based technologies throughout the organization
Imaging and Document Management Systems	• "We need access to information quickly and easily... HQ and Field locations as well as country to country..." • Document management systems allow electronic archiving as well as search and select capabilities to fully access and utilize organizational information • Information access at UNICEF is typically limited to hardcopy documents acquired through older, slower techniques (Mail, Fax, Telex) — this greatly reduces access and sharing of information
On-going General Systems Maintenance — End-user Support	• "Everything is Programme Manager! We do not ask for systems enhancements anymore because our requests are given the lowest priority" • The focus on Programme Manager and Migration have minimized resources available to service other user requests • "Front-line" users of the systems are constantly encountering system problems and have reached a high frustration level

Note: Currently Migration budget is not transferable

IRM DEVELOPMENT EFFORTS ARE BEING CHALLENGED BY FIELD-LEVEL SYSTEMS DEVELOPMENT PROJECTS

EXAMPLES	COMMENTS & QUESTIONS
"Programme Manager" type systems being developed by IRM and a group located in the India, Bangladesh and Pakistan offices	• High degree of duplicated development • Historically, strong development has occurred in the field — will the system developed in the field rival or exceed IRM's efforts? • Will UNICEF "require" all offices to use the IRM developed system or will offices be able to choose?
A "Field Transport" system has been developed by IRM as well as numerous field offices	• The many field transport requirements resulted in a complex transport system that does not meet the Field needs • Uniqueness of field level activities suggest some systems should be developed in the field rather than by IRM • The process of identifying which systems will be developed by IRM vs. the Field is unclear and not standardized
Non-IRM headquarters divisions frequently hire temporary staff and consultants to develop information systems	• Some users do not feel they are being properly supported — critical needs are not being addressed in a timely fashion • Situation creates tension between IRM and divisions • Temporary staff and consultants depart thereby leaving UNICEF with systems that can not be easily maintained

IRM HAS NOT IMPLEMENTED THE INTERNAL BUSINESS PROCESSES NECESSARY TO MANAGE SYSTEMS DEVELOPMENT ACTIVITIES WELL

- IRM lacks a comprehensive methodology (by contrast with high-level workplans) which details the specific activities, documentation and coordination/communication processes associated with major systems development projects:
  - High level development approaches for major initiatives lack the necessary details
  - Some IRM analysts and programmers are frustrated that no standard methodology exists
  - End-users are also frustrated by lack of input into joint IRM/End-User workplans
  - IRM's approach does not include the routine (rigorous) audit and management checkpoints that would be expected for big-budget projects such as Migration and Programme Manager

- Management control mechanisms for monitoring staff, budgets and schedules are inadequate
  - Staff members do not track time to specific project activities — so human resource costs (time and expense) associated with development activities cannot be assessed
  - Budgets are rarely tracked <u>by project</u> and never tracked at a lower level
  - There is little or no attempt to develop planned costs at the outset and then track actual expenditures against plan
  - Project schedules exist for management review purposes but not week-to-week or month-to-month planning and monitoring

- Proper user interaction does not occur
  - Users are often not involved in setting development priorities and lack access to information on project activities, costs and schedules
  - While IRM asserts that forums exist, user frustration indicates these are not operating optimally

FURTHER, BUSINESS PROCESSES TO MANAGE SUPPORT FOR INSTALLED BUSINESS SYSTEMS ARE ALSO INADEQUATE

- A methodology was developed in 1993 but it has not been implemented; revisions are "in process"

- Management control mechanisms do not exist to monitor request backlogs, staff and schedules associated with servicing user problems and requests
  - User requests are distributed to IRM work groups without ever being centrally logged and assessed for overall priority compared to all other user requests
  - Staff time to service requests is not tracked, thus it is impossible to determine annual costs
  - Schedules are not formally developed, tracked and communicated
  - There is no global view of service activities and the planned completion of service activities

- End-users appear inadequately involved in the process
  - IRM does not issue status reports beyond formal annual updates to communicate progress and planned delivery dates
  - Users must initiate progress reviews/updates with IRM
  - The user community is not involved in the overall prioritization of IRM service activities
  - Finished service requests are frequently released for use prior to receiving user acceptance

- A formal software release and control system does not exist for Headquarters or Field systems

Oppportunities...

IMPROVING INFORMATION SYSTEMS AT UNICEF NEEDS TO BEGIN WITH A COMPREHENSIVE REVIEW OF IRM MISSION AND BUSINESS PROCESSES

AREA	POTENTIAL IMPROVEMENT	VALUE TO UNICEF
Mission	• Develop long range strategies incorporating all UNICEF systems concerns • Serve as a central clearinghouse for all UNICEF systems activities	• Clear, long range directional guidance on UNICEF's use of technology • Reduction in unnecessary redundancies • Enhanced coordination of activities
Organization	• Restructure IRM division to conform with the revised mission • Increase staff training to develop solid business/systems analytical skill base	• Improved efficiency and effectiveness • Enhanced communication within IRM • Quality service with faster delivery
Project Management	• Institute formal methodologies to guide the systems development process • Utilize project management and control systems to monitor staff, budgets and schedules • Create new communication mechanisms that enhance IRM/End-User interaction	• Standardization and transparent method to systems development • Improved accountability to costs, milestones and staff productivity • Greater degree of "ownership" from end-users
Programme Manager	• Re-confirm scope, cost and timing	• Ensure value being realized for expenditure
Migration Project	• Re-evaluate cost drivers and business risk	• Minimize unnecessary cost and risk
Servicing Current Systems	• Employ project management and control systems • Create new communication mechanisms that enhance IRM/End-User interaction	• Continuity of systems maintenance approach across the division • Improved accountability • Better prioritization of user requests

Recommendations...

HEADQUARTERS IRM FUNCTION SHOULD BE REVIEWED FOR MISSION AND ORGANIZATION CHANGES TO ADDRESS IMPROVEMENT OPPORTUNITIES CITED

- IRM Mission should be re-evaluated:
    - Should IRM provide a "central clearinghouse" capability for the benefit of the Field locations that might preclude duplicative development efforts?
    - Should IRM serve as the focal point for developing long range business systems strategies for the Headquarters and Field locations?
    - Can IRM effectively manage large-scale systems development projects — or should they serve a role of "general contractor" who sub-contracts to external Systems Integration firms?
    - Should the entire IRM function be outsourced to systems experts such as EDS or CSC Index?

- After the IRM mission has been evaluated, the IRM division should be re-structured to conform with the revised mission statement
    - IRM is not presently funded to provide a "central clearinghouse" capability
    - No formal IRM strategy group currently exists; IRM section chiefs develop HQ/Field strategies on an "as time permits" basis
    - IRM staff members will require significant training to ensure they have the skills required to develop and implement large scale systems development projects

- If outsourcing is selected, UNICEF would be leading the UN in establishing world-class systems, as well as establishing a constituency with systems vendors

Recommendations. . .

IRM SHOULD IMPLEMENT BUSINESS PROCESSES TO EFFECTIVELY AND EFFICIENTLY MANAGE SERVICES PROVIDED

- Standard approaches and formal methodologies are needed for the following areas:
  - Feasibility Studies/Strategy Development activities
  - Large scale systems development support (Systems Development Life Cycle)
  - Maintenance and Enhancement of installed business systems

- Project Management and control systems are needed to identify accountabilities and establish quantifiable measurement of development and support activities
  - Large scale systems development projects typically require:
    - Project Management systems to plan/track/report on staff member performance
    - Issues tracking mechanisms to track/report on issues raised during the course of a project
    - Financial tracking/reporting systems that measure the "sunk costs" and "forecast to complete costs" for each of the major projects
    - Estimating software which captures not only the estimated staff/costs, but also the planning assumptions supporting the estimates
  - Maintenance and Enhancement efforts typically require:
    - Project Management systems to plan/track/report on staff member performance
    - Backlog Management system which allows for the track/reporting of open end-users requests for additional functionality

- New communication mechanisms are needed to ensure that the end-user community is aware of the status of their requests for IRM services

PROGRAMME MANAGER PROJECT SHOULD BE FORMALLY REVIEWED TO RE-CONFIRM SCOPE, COSTS AND SENIOR MANAGEMENT SUPPORT

- The Programme Manager project should not be stopped
  - Current monthly spending is estimated in the range of $200,000
  - This is not a large amount in relation to total IRM spending

- IRM and the Divisional Coordinators should jointly re-confirm the scope, cost and timing of the project
  - A review team should estimate development costs for each of the sub-systems
  - Divisional staff members should be involved in developing implementation costs for each of the Field locations
  - Further, a review team should contact Field locations and re-confirm their support for the capabilities included with the new system

- The issues raised should be evaluated by a cross-functional team of UNICEF staff and external consultants who can provide an objective view:
  - How does Programme Manager fit with UNICEF's other systems needs?
  - Have Field development efforts alleviated the need for a corporate Programme Manager?
  - Has the Programme Manager concept been "hijacked" to justify a broader range of systems development projects?
  - Should the Programme Manager concept be segmented into multiple initiatives?
  - Will Senior Management and the Field locations allocate the funds necessary to fully implement the new Programme Manager system?
  - Does the current roll-out strategy make sense? Is a five year roll-out acceptable?
  - How does the Programme Manager concept fit with UNICEF's long range vision?

PROGRAMME MANAGER REVIEW (CONT'D)

- The review of Programme Manager should culminate with a Senior Management signoff of the findings and recommendations
    - Based on the review, Senior Management should make "project" commitments rather than viewing the initiatives according to which "budget they hit"
    - Findings and recommendations should be clearly communicated to Headquarters and Field locations
    - Charter must be clear: Programme Manager or Office Manager?

MIGRATION PROJECT APPROACH SHOULD BE RE-EVALUATED TO BETTER PIN DOWN THE "COST DRIVERS" AND POTENTIAL BUSINESS RISK OF AN EXTENDED DEVELOPMENT SCHEDULE

- IRM should contact Wang and third party software vendors who might be able to provide software tools that would dramatically reduce the cost and timing of converting to the new hardware and software

- A cross-functional review team should be formed to address the issues raised in the prior section
  - Costs estimates should be developed which identify the two primary categories of cost:
    - •• "True" migration costs
    - •• Costs associated with re-engineering the installed business systems to provide additional features and functionality
  - The scope/cost of the re-engineering efforts should be evaluated with respect to the business justification
  - Divisional Management approval should be achieved for significant increases in the cost/timing of migrating a re-engineered business system versus a "one-for-one" migration of the current business systems features and functionality

- Senior Management approval should be achieved for the revised cost and schedule estimates
  - IRMAC may not be the appropriate forum given its historical focus on general status and coordination issues