付属資料２．

第２次短期調査帰国報告会資料／ミニッツ

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第２次短期調査帰国報告会資料／ミニッツ

１．調査・協議項目

（1）前回協議内容の確認

（2）実施方法や活動内容についての協議

（3）実施に必要な管理諸表案の作成

（4）機材設置予定場所の現状確認及び機材仕様書案の作成

（5）基本情報の追加収集とプロジェクト・ドキュメント(最終案)の作成

２．調査団の構成

氏　　名	分　　野	所　　属	担当業務
瀧沢　浩一	団長／総括	国際協力事業団 鉱工業開発協力部 鉱工業開発協力第一課　課長代理	・総括 ・協議の取りまとめ
本間　寛臣	IT教育／ カリキュラム	豊橋技術科学大学 工学教育国際協力研究センター 教授	・技術協力計画 ・カリキュラム／教材作成 ・大学間の連携
前川　朝康	マルチメディア技術 （機材計画）	（財）日本国際協力センター JICA沖縄国際センター 視聴覚技術研修室　主任代理	・マルチメディア協力内容 ・機材計画（視聴覚） ・C／P研修計画
堀越　　太	WBT 機材計画	（財）日本国際協力システム （JICS）業務第一部機材情報課	・機材計画作成 ・機材仕様書案作成
橘　　秀治	協力企画	国際協力事業団 鉱工業開発協力部 鉱工業開発協力第一課　職員	・調査／協議取り進め ・プロジェクト実施体制 ・ミニッツ作成
岩瀬　信久	人材育成 （コンサルタント）	（有）アイエムジー　パートナー	・プロジェクト・ドキュメント案の作成 ・基礎情報収集

３．調査日程

日順	月日	曜日	時間	総　括	IT教育／カリキュラム	マルチメディア技術	協力企画	WBT機材計画	人材育成（コンサルタント）
				瀧沢	本間	前川	橘	堀越	岩瀬
1	11/14	水				沖縄発 （JL757/11：40） 香港発 （CX711/16：00） シンガポール発 （SQ402/22：45） コロンボ着（00：20）	成田発 （SQ997/12：00） シンガポール発 （SQ402/22：45） コロンボ着（00：20）		成田発（SQ997/12：00） シンガポール発 （SQ402/22：45） コロンボ着（00：20）
2	11/15	木	午前 午後			JICA事務所担当との打合せ ICTにて打合せ 教育・高等教育省及びICTほかへのプロジェクト・ドキュメント（プロ・ドク）素案説明及び意見交換			JICA事務所担当との打合せ 教育・高等教育省及びICTほかへのプロ・ドク素案説明及び意見交換
3	11/16	金	終日			ICTとの協議（プロ・ドク全般）			ICTとの協議（プロ・ドク全般）
4	11/17	土	午前 午後	成田発 （SQ997/12：00） シンガポール発 （SQ402/22：45） コロンボ着（00：20）	名古屋発 （SQ981/09：50） シンガポール発 （SQ402/22：45） コロンボ着（00：20）	市場調査 （機材調達状況） 機材計画書の修正	ICTとの協議 （プロ・ドク） 計画管理諸表の作成		ICTとの協議（プロ・ドク全般） プロ・ドク素案改訂
5	11/18	日		団内打合せ プロ・ドク素案改訂 計画管理諸表の作成				成田発 （SQ997/12：00） シンガポール発 （SQ402/22：45） コロンボ着（00：20）	プロ・ドク素案改訂 報告メモ作成 団内打合せ
6	11/19	月	終日	ペラデニヤ大学の施設状況確認及び意見交換		ICTとの打合せ 機材計画の策定	ペラデニヤ大学との意見交換	ICT視察 ICTとの打合せ 仕様書案作成	ペラデニヤ大学との意見交換
7	11/20	火	午前 午後	JICA事務所、大使館との打合せ 大蔵省ERD表敬 ICTとの協議（PDM及びPOについて）		ICTと意見交換 機材計画の策定		市場調査、ICT等との打合せ 仕様書案作成	JICA事務所、大使館との打合せ 大蔵省ERD表敬 ICTとの協議（PDM及びPOについて）
8	11/21	水	午前 午後	UGCにて協議 モラトワ大学の施設状況確認及び意見交換 ICTとの協議（プロ・ドク後半について）		ICTにて協議 機材計画策定 市場調査		市場調査、ICT等との打合せ 仕様書案作成	UGCにて協議 モラトワ大学の施設状況確認及び意見交換 ICTとの協議（プロ・ドク後半について）
9	11/22	木	終日	ICTとの協議（プロ・ドク全般について）		適時、市場調査・打合せ（機材レイアウト案作成）	ICTとの協議	市場調査、ICT等との打合せ 仕様書案作成	ICTとの協議
10	11/23	金	午前 午後	教育・高等教育省及びICTとの協議 （プロ・ドク案について） ICTとの協議（ミニッツ案について）		適時、市場調査・打合せ（機材レイアウト案作成）	教育・高等教育省及びICTとの協議	市場調査、ICT等との打合せ 仕様書案作成	教育・高等教育省及びICTとの協議
11	11/24	土		ICTとの協議 団内打合せ 機材仕様書案取りまとめ 計画管理諸表の作成				市場調査、ICT等との打合せ 仕様書案作成	必要に応じてICTとの協議 団内打合せ 機材仕様書案取りまとめ 計画管理諸表の作成
12	11/25	日		ミニッツ作成 プロ・ドク最終案作成 団内打合せ	コロンボ発 （SQ401/01：35） シンガポール発 （SQ012/09：45） 成田着（17：05）	ミニッツ作成 プロ・ドク最終案作成 団内打合せ		仕様書最終案取りまとめ	ミニッツ作成 プロ・ドク最終案作成 団内打合せ
13	11/26	月		教育・高等教育省及びICTほかとの協議		教育・高等教育省及びICTほかとの協議（プロ・ドク案及びミニッツ案について）		仕様書最終案の説明及び意見交換（ICT及び他大学）	教育・高等教育省及びICTとの協議
14	11/27	火		ミニッツ署名・交換 JICA事務所・大使館報告		コロンボ発 （SQ401/01：35） シンガポール発 （CX714/11：35） 香港発 （JL758/14：20） 沖縄着（17：30）	ミニッツ署名・交換 JICA事務所・大使館報告	JICA事務所報告 調達に関する打合せ	ミニッツ署名・交換 JICA事務所・大使館報告
15	11/28	水		コロンボ発 （SQ401/01：35） シンガポール発 （SQ012/09：45） 成田着（17：05）			コロンボ発（SQ401/01：35） シンガポール発（SQ012/09：45） 成田着（17：05）		コロンボ発（SQ401/01：35） シンガポール発(SQ012/09:45) 成田着（17：05）

４．主要面談者

（1）スリランカ側

1） 教育・高等教育省

Mr. A. M. Chandrapala	Additional Secretary

2） 大蔵省

Ms. Sujatha Cooray	Director, Department of External Resources

3） 大学助成委員会（UGC）

Prof. B. R. R. N. Mendis	Chairman

4） コロンボ大学

Savitri Goonesekere	Vice-Chancellor

5） コロンボ大学コンピューター技術センター（ICT）

Prof. V. K. Samaranayake	Director
Mr. S. T. Nandasara	Lecturer

6） ペラデニヤ大学

Prof. Kapila Goonesekera	Vice-Chancellor
Dr. Kithsiri M. Liyanage	Director, the Computing Center

7） モラトワ大学

Dr. Nalin Wickremaarachchi	Head of Computer Science & Eng.
Dr. Gihan V. Dias	Technical Manager, LEARN

（2）日本側

1） 在スリランカ日本国大使館

江口　克世	二等書記官

2） JICA専門家

表　伸一郎	個別専門家（開発援助策定及び実施支援）

3） JICAスリランカ事務所

海保　誠治	所　長
鈴木　康次郎	次　長
田中　博之	所　員

５．調査・協議結果概要

（1）プロジェクト名称の変更

プロジェクトの名称を次のとおり再変更するこでICTと合意した。

変更前：The Capacity Building Project of the Institute of Computer Technology（ICT）
（ICT能力向上プロジェクト）

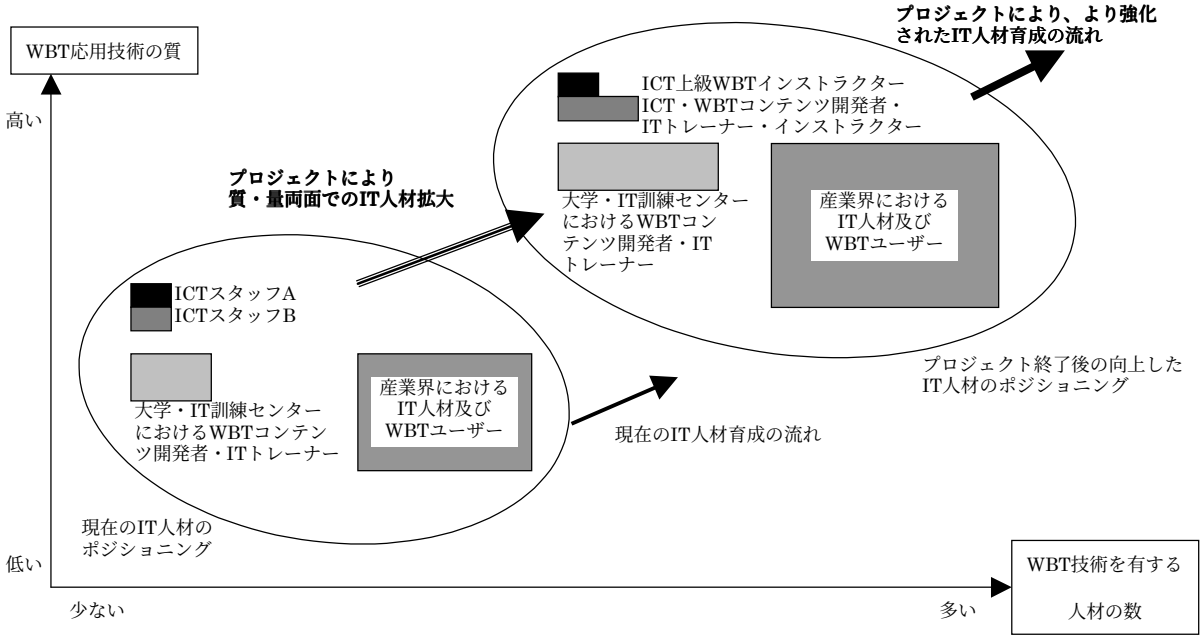
変更後：Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo（スリランカ情報技術分野人材育成計画）

（2）プロジェクト期間

技術革新の早いIT分野であり、技術移転の内容・機材の関係などからプロジェクト期間は３年間とすることを再確認した。

（3）プロジェクトコンセプトについて

プロジェクト目標は「ICTがスリランカ産業界のニーズに合致したITトレーニングを大学・ITトレーニングセンター・産業界のIT関連人材に対して、より効果的・効率的に実施できるようになる」とし、ICTの能力向上を通じてIT分野の人材を育成していくものである。プロジェクト戦略イメージは次のとおりである。



図－１　プロジェクトの戦略イメージ

（4）技術移転の内容について

技術移転の内容については、マルチメディア技術のみに特化するのではなく、以下の５分野について体系化された技術(理論・技術)を実施する。その具体的な成果としてWBTを実施できるようになることを目標とする。

(A) マルチメディア技術	(B) ネットワーク技術
(C) データベースマネージメント技術	(D) カリキュラム・教材作成　(E) 研究・開発

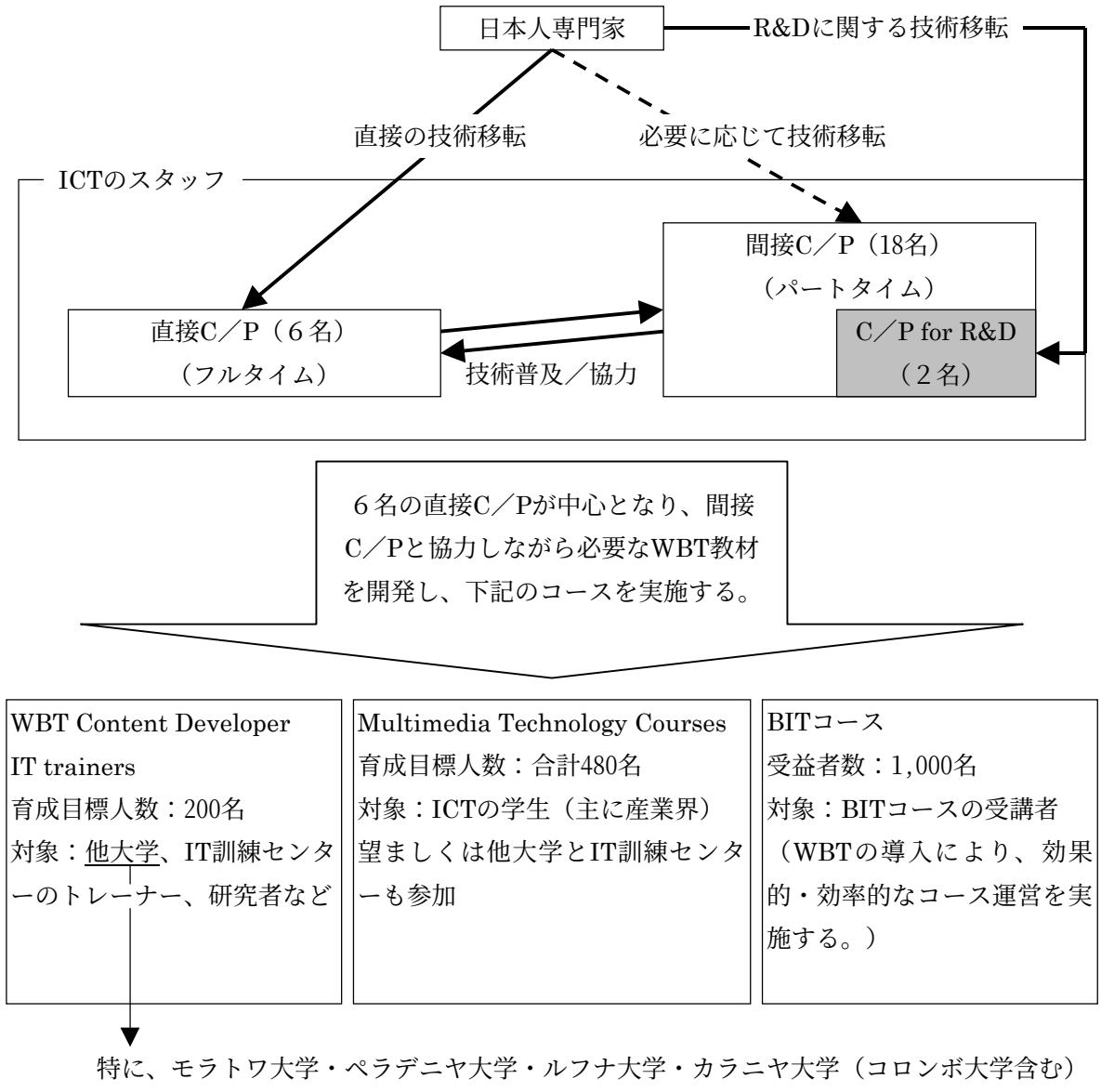
なお、３年間で技術移転する内容(詳細)については、本間団員の報告(８.参照)に記載した。

（5）プロジェクト活動概要について

プロジェクト活動はICTで実施されるものであり、ICTのスタッフを直接C／Pと間接C／Pと位置づけ、基本的に直接C／Pはフルタイムでプロジェクトに従事し、日本人専門家からの技術移転を直接受ける。間接C／Pはパートタイムでプロジェクトに従事し、必要に応じて日本人専門家あるいは直接C／Pより技術移転を受ける。また、ICTへ移転した技術は他の大学への普及が図られることとなり、そのために必要な措置(ICTでの研修参加者への休暇の付与、旅費や宿泊費への予算措置など)はUGCが実質的な調整を行うこととなった。技術移転(普及)の対象者及び内容は以下のとおりである。

表－１　技術移転（普及）の対象者及び内容

№	ターゲット・グループ（裨益対象）	活動と裨益内容	インストラクター	活動場所
1	ICT上級WBTインストラクター（日本人専門家の直接C／P） ICTスタッフ６名	1．WBT技術／指導方法の移転 2．WBT教材／ライブラリーの開発 3．WBT訓練教材の開発 4a．WBTコンテンツ開発者・ITトレーナー訓練のためのトレーナー訓練 5a．WBTコンテンツ開発者ITトレーナー訓練 6a．ICTの学生・訓練生の訓練	日本人専門家	ICT
2	ICT・WBTコンテンツ・デベロッパー／ITトレーナー・インストラクター（日本人専門家の間接C／P） ICTスタッフ18名	4b．必要に応じて4a記載の訓練を受講 5a．WBTコンテンツ開発者・ITトレーナー訓練 6a．ICTの学生・訓練生の訓練 （3．WBT訓練教材の開発） （4a．WBTコンテンツ開発者・ITトレーナー訓練のためのトレーナー訓練）	必要に応じてICT上級WBTインストラクター（必要かつ可能な場合に日本人専門家）	ICT
3	大学及びIT訓練センターにおける教員または研究員（WBTコンテンツ開発者及びITトレーナー候補者） 200名	5b．5a記載のWBTコンテンツ開発者・ITトレーナー訓練受講 6a．WBTコンテンツ開発またはWBT訓練実施	ICT上級WBTインストラクター、ICT・コンテンツ開発者／ITトレーナー・インストラクター	ICT
4	ICT及びBITプログラムの生徒・訓練生（更に大学・IT訓練センターの生徒への波及が期待される） 少なくとも、1,480名	6b．開発されたWBTコンテンツの利用またはWBT訓練の受講	ICT教員及び研究員（更に大学・IT訓練センター教員及び研究員への波及が期待される）	ICT（更に大学・IT訓練センターへの波及が期待される）

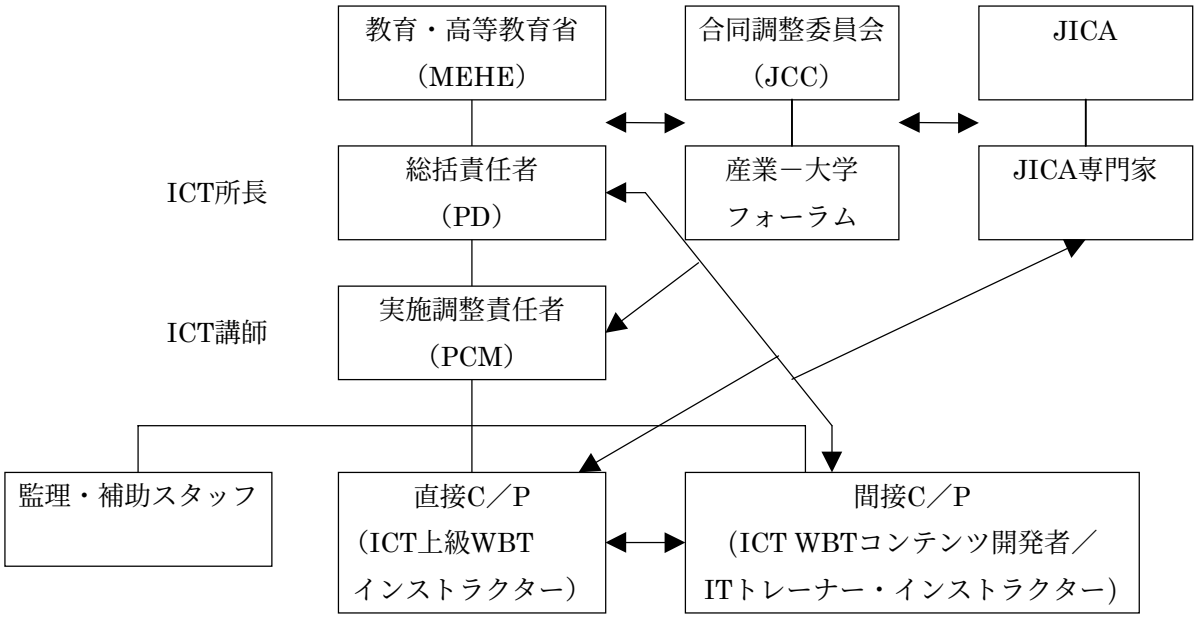


注意１．コース立ち上げの初期段階には、専門家も必要に応じてサポートする。
２．上記以外の既存のトレーニングコースにおいても、マルチメディア技術基礎を加えるなど、必要に応じて見直しを実施する。

図－２　技術移転の流れ（イメージ図）

（6）プロジェクト実施体制

プロジェクトの実施体制は以下に記すとおりであり、JCCのほかに産業界の意見をプロジェクトに効果的に反映させるためにIndustry-University Forum（産業－大学フォーラム）をJCCの付属機関として設置した（メンバーについてはミニッツのAnnex９を参照）。



図－３　プロジェクト実施体制イメージ図

（7）機材調達について

基本的には現地調達でほとんどすべての供与機材を調達する見込みであり、予算規模は１億から１億2,000万円程度である。調査団帰国後に仕様書を作成し、2002年１月末ごろのR／D署名後に速やかに調達手続きを開始し、３月中旬には機材調達に関する契約を締結する予定である。なお、R／D署名と同時に機材に関する要請書(A4)を提出するようにスリランカ側へは依頼済みである。

６．協議結果詳細

調 査 項 目	現状及び問題点など(既決定事項を含む)	対 処 方 針	協 議 結 果
第１ 全 般	スリランカ政府は日本政府に対して、2000年８月に「マルチメディア技術訓練・開発センタープロジェクト」に対する協力を要請してきた。協力対象先であるICTは1987年４月から３年間、汎用コンピューターを使用したソフトウェアの開発が可能で、指導的役割を果たし得るコンピューター技術者(アナリストプログラマー)を養成することを目的としてプロジェクト方式技術協力が実施され、フォローアップ協力、アフターケアプログラムを経て、現在は第三国研修を実施している。 この間、2000年７月の九州・沖縄サミットにおけるIT憲章を背景に、IT分野に係る協力案件の重要性にかんがみて、2001年３月にはIT分野プロジェクト形成調査団を、2001年７月には「マルチメディア技術訓練・開発センタープロジェクト」に関する第１次短期調査団をスリランカへ派遣した。 これまでの調査結果から、IT分野における人材育成システムの改善を図り、産業界のニーズに合致した人材を供給することを目的として、WBTに必要な要素技術(マルチメディア技術、ネットワーク技術、セキュリティー技術、データベースマネージメント技術)の移転・普及を支援すること、同分野でのR&Dの手法を併せて指導すること、他大学と協力してWBTのモデルケースを実施することを基本的な活動とすることで合意している。 なお、プロジェクトの協力内容からプロジェクト名を「コロンボ大学コンピューター技術センター能力向上プロジェクト」へ変更している。	・本プロジェクトで実施する内容、特にマスタープランについてスリランカ側と協議し、R／D署名時に作成するミニッツの添付資料とするプロジェクト・ドキュメントの最終案として取りまとめる。 また、一連の協議結果をミニッツとして取りまとめ、署名・交換する。 ・本短期調査で予定している具体的な調査・活動内容は、以下のとおり。 (1) プロジェクトの協力範囲と活動内容について協議し、実施に必要な管理諸表案としてまとめる。 (2) 機材設置予定場所などに関する現状を調査したうえで協議し、供与機材案及びその仕様書案を取りまとめる。 (3) プロジェクト実施環境の確認に必要な基本情報の追加収集を図る。 (4) 調査結果をプロジェクト・ドキュメント(最終案)として取りまとめる。	・左記原則により、対応した。
第２ プロジェクト実施の背景(実施環境) (1) 社会情勢など (2) 対象分野の状況 (3) スリランカ政府の戦略 (4) スリランカにおける対象分野関連事業	・1998年のスリランカ政府による「情報技術の年」宣言後、情報技術分野の強化は国家的開発計画のなかで強力に推進すべきものと認識されているが、産業即戦力の人材不足(質・量ともに)が当分野発展の支障となっており、同分野における人材育成は火急の課題となっている。	・左記に関する未入手情報を入手し、協力の背景を確認する資料とする。	・追加情報を入手し、プロジェクト・ドキュメントの記述時に参考にした。

調 査 項 目	現状及び問題点など(既決定事項を含む)	対 処 方 針	協 議 結 果
	・高等教育・情報技術開発省の下部組織であるCINTECにおいて、スリランカ政府のIT戦略を９割方作成したところであり、今後はこの戦略に基づいて各省庁がCINTECの調整の下、施策を展開する予定である。	・左記に関する最新情報を入手する。	・最新情報を聴取し、プロジェクト・ドキュメントの関連部分へ反映した。スリランカ政府のIT戦略のなかで、ITは経済発展に必要なキー・ファクターの一つであり、すべての経済セクターがその重要性を認識すべきであること、人材育成は最重要課題であること、大学は人材育成の役割を拡大し、最新技術に関するプロフェッショナルレベルのコースを強化すべきであり、大学間及び研究所間の緊密な関係を構築するべきであることなどが述べられていることを再確認した。 なお、スリランカ国内の省庁再編に伴い、高等教育・情報技術開発省は分割後に教育省及び郵政・電気通信省と統合され、「教育・高等教育省」と「郵政・電気通信・情報技術開発省」となった。 そのため、CINTECも「郵政・電気通信・情報技術開発省」の下部機関となったが、CINTECがスリランカのIT戦略を作成・調整することに変わりはないことを確認した(当プロジェクトへは当初の構想どおり、JCCメンバーとして参加する)。
	・前回調査にて世界銀行及びADBによる協力が行われていることを確認しているが、世界銀行・ADBともに教育分野のプロジェクトにITを取り入れて実施しており、IT産業分野自身を協力対象としている協力ではない。	・左記に関する追加情報を入手する。特にADBが実施を計画しているPost-Secondary Education Project(PPTA)の事業内容の詳細を確認する。	・追加情報を入手し、プロジェクト・ドキュメントの関連部分へ反映した。

調 査 項 目	現状及び問題点など(既決定事項を含む)	対 処 方 針	協 議 結 果
第３ 人材育成とITに係る分野の開発課題とその現状 (1) 対象課題の制度的枠組み (2) 対象開発課題・現状 (3) 日本の援助戦略上の意義	・スリランカにおけるプロフェッショナルレベルのＩＴ技術者の需要は年間2,000人といわれているが、現時点での供給は250人程度にすぎず、産業界の求める人材が量的にも質的にも十分でない。将来的には公的なIT教育機関で1,000人、民間のIT教育機関で1,000人のプロフェッショナルレベルのIT技術者を育成することを計画している。 ・IT教育に対する高い需要を背景に民間のIT教育機関が急増したが、公的なIT関連専門学校や民間専門学校を含め、各教育機関の教育内容や学位水準に差がみられることも課題とされている。 ・我が国の援助戦略上の意義としては、安価で良質なスリランカ人IT技術者の供給増による利益、日本流のIT関連スタンダード普及への寄与の可能性、外交的利益が考えられる。	・左記に関する追加情報を収集し、プロジェクトのマスタープラン協議時の判断材料として活用する。	・追加情報を収集した結果、これまでの情報と大きく変わる傾向はなかった。 なお、ICTが運営管理しているBITコースは数千人規模の学生が受講しており、一つのデファクト・スタンダードになれることを確認した。
第４ プロジェクトの戦略 (1) 実施戦略 (2) 実施体制 (3) 協力体制 (4) 自立発展性 (5) 特別な配慮	・IT分野における人材育成システムの改善を図り、産業界のニーズに合致したIT技術者の量の拡大と質の向上の両面に貢献することを目的として、ICTの能力向上を図ることとしている。 具体的にはITの普及・利用に有効であるWBTの実施に必要なIT関連技術の移転・普及を支援するとともに、同分野に関する技術開発のできる人材育成を支援するためにR&Dの手法についても技術移転を実施する。 また、他大学(モラトワ大学・ペラデニヤ大学)と協力してWBTのモデルケースを実施することを基本的な活動とすることで合意している。	・左記を再確認し、プロジェクト・マスタープラン及び管理諸表に反映する。	・左記について再確認し、管理諸表に反映した。ただし、他大学との協力については当初想定していたかたちでモラトワ大学及びペラデニヤ大学のみに絞るのではなく、工学部あるいはIT関連学部を有するルフナ大学、ケラニヤ大学及びコロンボ大学も含めた５大学に、プロジェクトで移転された技術を優先的に普及することで合意した(他の大学の参加を妨げるものではない)。 このために必要な措置(予算、各大学からの参加者への業務出張の許可)はスリランカ側のUGCがとることで合意し、その旨をミニッツに記載した。 また、産業界及び各大学からの意見を吸い上げる場とした「Industry-University Forum(産業－大学フォーラム)」をJCCの下部組織として組織し、各大学からもメンバーとして参加させることとした。

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			上記のようなプロジェクト実施体制を整備したこと、またコロンボ大学・モラトワ大学・ペラデニヤ大学との関係及びプロジェクトの円滑な運営を考慮し、モラトワ大学及びペラデニヤ大学に対する機材供与は実施しないこととした。
	・技術移転の結果、具体的にICTが実施している既存の各コースの内容・運営体制をどのように見直すのか、あるいは新規コースを立ち上げるのかなどの計画が明確にされていない(現在、ICTに計画作成を依頼中である)。	・左記について、現在ICT作成中の計画を確認し、協議した結果を、プロジェクト・マスタープラン及び管理諸表に反映する。	・左記について、プロジェクト活動の一環として ①Web Content Developer ②IT Trainer育成のためのトレーニングコース及び ③マルチメディア技術総合コース(12モジュール中8モジュールが新規立ち上げ)を立ち上げるとともに、既存のいくつかのコースをプロジェクトの成果に応じて見直すこととし、プロジェクト・マスタープラン及び管理諸表に反映させた。
	・R&Dに関する協力の内容について、具体的な体制及びR&Dのテーマが未確定である(今次調査時にR&Dに関するプロポーザルを準備するようにスリランカ側へ依頼済みである)。	・スリランカ側が準備する予定のプロポーザル内容を審査のうえ、R&Dのテーマを2～3件に絞り込むこととする。また、ICTの教官／インストラクターにR&Dに協力できるような学生がついているか(実際にR&Dの活動ができる体制・人員が確保できるか)確認し、場合によっては関連学部との協力も検討する。	・左記について説明し、スリランカ側の理解を得るとともに、下記のような選考基準に基づきICTから提出されたプロポーザルのなかから2～3件のR&Dのテーマに絞り、プロジェクト活動の一環として取り上げることで合意し、その旨ミニッツに記載した(現在、選考作業中)。 a) 将来性のあるテーマであること b) リソース(投入)が少なくて済むもの c) WBTに関連するテーマであること d) 学会に発表できる見込みのあるもの
	・プロジェクトに係るスリランカ側実施機関の予算措置状況及び見通しが未入手である。	・左記に関する資料を入手し、ミニッツに添付する。	・左記について資料を入手し、ミニッツに添付した(基本的にスリランカ側で必要となる予算は措置される予定)。

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	・スリランカ側実施機関の人員配置(C／P配置)計画が未入手である。特にWBT実施の協力機関であるモラトワ大学及びペラデニヤ大学のインストラクターを、どのような位置づけとするか未確定である。	・左記に関する資料を入手し、ミニッツに添付する。 モラトワ大学とペラデニヤ大学のインストラクターについては間接C／Pとして位置づけ、直接C／PであるICTのインストラクターが間接C／Pへ技術移転することとする。ただし、可能であれば日本人専門家からの指導を直接C／Pと同時に受けても構わないこととし、これに伴うローカルコスト(旅費や宿泊費など)はスリランカ側が負担することとする。 なお、間接C／Pも評価の対象とする。	・前述のとおり。
第５ プロジェクトの基本計画 (1) 上位目標 (2) プロジェクト目標 (3) プロジェクト成果 (4) プロジェクト活動 (5) 投　入 (6) 外部条件 (7) 事前の義務ほか	・プロジェクト名称について、第１次短期調査時に「スリランカ国コロンボ大学コンピューター技術センター能力向上プロジェクト」とすることで基本的な合意を得ている。	・左記について、プロジェクト目標や活動内容を協議する過程で、よりプロジェクトの内容を表しているプロジェクト名称が双方で合意された場合には、プロジェクト名称を変更する。	・プロジェクトの名称は、調査団出発前の各省会議の結果を踏まえ、スリランカ側と再協議し「Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo(スリランカ情報技術分野人材育成計画)(仮)」とした。
	・第１次短期調査時に、技術革新の早いIT分野であり、技術移転の内容・供与機材の関係から、プロジェクト期間は３年間とすることで基本的な合意を得ている。	・左記のプロジェクト期間について再確認するとともに、プロジェクトは2002年６月１日から３年間のプロジェクトとすることを確認し、理解を得たうえでミニッツに記載する。	・左記について再確認し、理解を得たうえでミニッツに記載した。
	・プロジェクトの目標・成果・活動に関し、ミニッツにPDM案として整理している。さらに、PDM案を実現するための実施内容をＰＯ案として整理し、必要な機材についても機材リスト案の形式で整理している。	・左記のPDM案、PO案についてスリランカ側と協議し、合意した内容を管理諸表としてミニッツに添付する。	・PDM案、PO案について合意を得て、ミニッツに添付した。
	具体的な投入について ・専門家の派遣に関しては、長期専門家２名(総合的計画と調整、技術的計画と調整)のほか、短期専門家７名程度／年(IT分野５名程度／R&D分野２名程度)を派遣する。	・左記をスリランカ側に説明し、理解を得て、ミニッツに記載する。	・左記についてスリランカ側の合意を得て、結果をTSI案としてミニッツに添付した。

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	・日本への研修員受入れに関しては、IT分野とR&Dの両分野を併せて０～３名程度／年を受け入れる。なお、研修員受入事業費の状況により、受入れがゼロになる場合もあることを説明する。	・左記をスリランカ側に説明し、理解を得て、ミニッツに記載する。	・左記についてスリランカ側の合意を得て、結果をTSI案としてミニッツに添付した。
	・機材供与に関しては、ICTにWBTの普及・実施の研修に必要な機材、WBT教材開発に必要な機材及びプロジェクトで取り上げるR&Dに必要な機材を整備する。 さらに、モラトワ大学・ペラデニヤ大学にWBTの普及・実施の研修に必要な最小限レベルの機材一式を整備する。 なお、供与機材の選定に関しては、①220ボルト対応の電源や英語による表示や説明書が整備されているなど、現在販売されている仕様のままでも現地での利用に支障がないこと、②現地で調達が可能なこと、③可能な限り汎用目的での利用が可能なこと、④可能な限り、複数の製造会社が存在することを選定基準にする。	・左記をスリランカ側に説明し、理解を得て、機材リストをミニッツに添付する。 また、機材リスト案については、現地調達の可能性を調査するとともに、最終的な品目や仕様についてもスリランカ側と協議し、合意内容をミニッツに記載する。 なお、機材供与の総額は、ICT及びモラトワ大学・ペラデニヤ大学への供与機材の合計が、現時点の概算で１億～１億3,000万円程度になると予想される。スリランカ側との協議でも、これを最上限とし、必要に応じて機材リストからの削除や仕様変更を行う。	・左記について日本側が供与予定の機材リストをミニッツに添付した。なお、前述のとおりにスリランカ側と協議した結果、モラトワ大学及びペラデニヤ大学への機材供与は実施しないこととした。
	・スリランカ側はC／P配置と関連人件費や回線費をはじめ、ローカルコストの負担、機材設置環境の確保・整備(空調、WBT用の電話回線、機材格納・設置用家具ほか)を行う。	・左記をスリランカ側に説明し、理解を得て、ミニッツに記載する。	・左記についてスリランカ側の合意を得て、ミニッツに記載した。また、プロジェクト専用のインターネット回線を引くことも合意し、その旨をミニッツに記載した。なお、緊急時給電装置(UPS)については、協議の結果日本側の供与機材に含めることとした。
	・プロジェクト活動の一環として、WBT用の教材をOJTとして開発することとしている。	・プロジェクト期間と投入量を勘案し、モデルケースとして適当な分野を３～４件程度に絞り込むこととし、ミニッツに記載する。特に非公式ながら先方より希望が出されている。 BIT向けのWBT教材開発については、BITの中身を十分に確認し判断することとする。	・左記について第１段階としてモニタリング・フィードバックが容易なICTが実施しているトレーニングコース(WBTコンテンツ・ディベロッパーコースあるいはITトレーナーコース等)でＷＢＴ教材を開発すること、第２段階として大学間で共有可能な教材やＢＩＴコース向けのWBT教材を開発することで合意し、その旨をミニッツに記載した。

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	・他大学とモデルケースとしてWBTを実施することをプロジェクト活動の一環としている。	・左記について具体的にどのような分野でWBTを実施するのか協議し、結果をミニッツに記載する。	・前述のとおり、プロジェクトの活動はICTのみで実施することとし、技術移転の成果は当初のモラトワ大学・ペラデニヤ大学のみではなく、工学部あるいはIT関連学部を有する５大学へ優先的に普及することで合意した。具体的には、ICTで実施するトレーニングコースへスリランカ側の負担により、他の大学のTeaching Staffを参加させることを合意し、その旨ミニッツに記載した。
	・プロジェクトのコンテンツ開発用プラットフォームとしてDaisy(日本主導で開発した視聴覚障害者用の録音図書を製作する世界標準の録音・編集アプリケーションソフト)を活用することを検討している。Daisyは非営利であれば、日本障害者リハビリテーション協会よって無料で提供される。Daisyを推進することにより、デジタルディバイドの解消のみならず、バリアフリーを推進することともなるため、積極的な活用を検討している。	・日本主導で開発した視聴覚障害者用の録音図書を製作する世界標準の録音・編集アプリケーションソフトであり、本プロジェクトでは基本的にDaisyをコンテンツ開発用のプラットフォームとして活用することを考えている旨を説明し、理解を得たうえで、必要があればミニッツに記載する。	・左記について説明し、基本的な理解を得た。
第６ プロジェクトの必要性・妥当性 (1) 公益性と公平性 (2) 技術の的確性 (3) 対象分野における日本の技術的優位性 (4) 予想インパクト (5) 実施妥当性	・インパクトの予想に必要な基礎資料を入手している。 ・上記プロジェクトの基本計画に応じてインパクトの見直しが必要になる可能性あり。	・左記に関する最新情報の有無を確認し、可能な限り最新の資料を入手する。 ・左記を確認し、必要な見直しを行う。	・情報を入手し、プロジェクト・ドキュメント記述の参考にした。 ・必要な見直しを行った。
第７ 資　料 (1) PDM (2) PO (3) 機材スペック資料 (4) その他	・上記内容を管理諸表として整理し、管理諸表案を作成している(ミニッツのとおり)。 ・今後の予定は以下のとおりである。 実施協議：2002年１月下旬 供与機材調達：2002年２月より(2001年度予算) プロジェクト開始：2002年６月１日より３年間	・上記の対処方針に基づいて協議した結果を基に、左記の管理諸表案を改訂し、ミニッツに添付する。 ・左記について説明するとともに、機材調達に関してはＡ４フォームをR／D署名と同時に日本側へ提出する必要があることを説明し、理解を得たうえで必要があれば、ミニッツに記載する。	・管理諸表を改訂し、ミニッツに添付した。 ・左記について説明し、理解を得るとともにミニッツに記載した。

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	・スリランカ政府より、ICTに対する無償資金協力の要請がなされている(2001年度は採択が見送られたが、2002年度案件として引き続き、高いプライオリティーで要請があげられている)。 本プロジェクトに必要な機材はプロジェクト方式技術協力予算にて供与するため、無償資金協力と直接的な連携は必要ないことが確認されている。	・ICTに対する無償資金協力の必要性・妥当性を判断するうえでの情報収集を可能な範囲で実施する(判断は伴わない)。	・左記について可能な範囲で情報収集した(先方でプロジェクト方式技術協力と無償資金協力を混同しているケースが見受けられたので、違いについて説明した)。

７．調査団長所感

前回の第１次短期調査において、本プロジェクトはコロンボ大学のICTに加えて、IT教育分野での有力校であるモラトワ大学とペラデニヤ大学もプロジェクトの枠組みのなかに入れることとした。具体的には、これら２大学に対してもWBTのモデルケースを実施するための機材を供与することを計画していた。しかし、今次調査では２大学への機材供与は取りやめ、プロジェクトのC／PはICTのみとする方針への軌道修正を行った。これは、①ICTが他の２大学との連携を現在要請中の無償案件のことであると誤解しており、技術協力案件である本プロジェクトについては２大学を参加させることに難色を示していること、②コロンボ大学を含む３つの大学は互いにライバル関係にあり、競争意識は予想以上に強く、うち１つの大学を上位に位置づけるかたちで３大学間の連携、調整を図ることは容易ではないと予想されること、という理由によるものであったが、現実的なプロジェクト実施体制を築くためにはやむを得ない選択であったと考える。

ただし、ICTでのプロジェクトの成果をコロンボ大学のICT以外の学部も含む他の大学へ普及させることは、プロジェクト目標の観点からも重要である。したがって、その実現に向け、大学教育行政を所管する教育・高等教育省がJCCの議長を務めることとした。また、国内の大学のなかでも、特に先の２大学に理工学分野の学部を有するケラニア大学とルフナ大学を加えた４大学のスタッフが、ICTでのトレーニングコースに参加しやすくするための措置をUGCが講じることを確認した。さらに、産業界のニーズを反映させるために、前回の調査で提言されていた産業－大学フォーラム（Industry-University Forum）のメンバーについても構想が具体化され、商工会議所、業界団体、大学、関係省庁などから成る「産官学」の協議体が組織されることとなった。

前回調査で報告されているとおり、ICTが組織、人材の観点から本プロジェクトのC／Pとしてふさわしいことは、今回の調査においても改めて確認された。プロジェクト実施の段階では、JCCとフォーラムの所期の機能を活用して、いかにICTと大学、産業界との有効な連携、協力関係を構築することができるかが課題となるといえよう。

来年2002年は日本とスリランカの国交樹立50周年にあたる。この年に開始される本プロジェクトが、広くスリランカ全体のIT人材育成に大きく貢献することを通して、日本の協力における象徴的な存在となることを期待する。

８．調査団員報告（本間団員）

８－１　調査／協議結果概要

（1）実施機関の現状

1）　技術のレベル

今回の訪問では、ICT及びComputer Science Departmentの一部の教官スタッフと研究

プロポーザルを主要テーマとして面談した。面談した氏名リストと研究テーマ名を以下に示す。

① Dr. N.D. Kodikara
Research title: Virtual Reality Systems in Education

② MJPU Samanthilaka
Research title: Web Caching Techniques Suitable for the Local Environment

③ Dr. D. N. Ransingle
Research title: Development of novel programming subsystems and task specific parallel algorithms for cluster computing environments

④ Dr. A. P. Madurapperuma
Research title: Multi Media information storage and retrieval system

⑤ S. T. Nandasara
Of multilingual input/display method (Unicode compatible)

面談した５名のスタッフのうち、３名が博士号を取得しており、残りは修士号取得者である。日ごろから、研究活動は行っているようである。Computer Science Departmentには大学院も設置されており、研究環境が整っているものと思ったが、大学院の学生はほとんどがパートタイムの大学院生であり、企業派遣の学生である。このため、修士研究はほとんど実施されていないとのことであった。もっぱら、学部４年生の卒業研究が、大学教官にとって研究用マンパワーの供給源となっている。すなわち、極端にいえば、毎年新しい学生が来て卒業研究を実施することになるので、研究の進捗はいたって遅いことになる。このような観点から、研究活動はそれほど活発ではないと見受けられた。しかし、教官個々人の研究ポテンシャルは十分にあると感じられた。これまでの研究環境が恵まれていないことになる。

2） カリキュラム・教材

カリキュラム・教材については、今回は特に情報を取得しなかった。前回の短期調査ではモラトワ大学及びペラデニヤ大学が当プロジェクトのC／Pとなり得る可能性があり、今回の調査で両大学のカリキュラム(特にペラデニヤ大学)と教材を更に収集することを考えていた。しかし、今回の調査で、両大学がC／Pとして当プロジェクトに参画する可能性はなくなったので、カリキュラム・教材の情報収集は行わなかった。

(2) プロジェクト協力内容

1） 技術移転項目

技術移転項目に関しては、大別してMultimedia関連技術、Network Communication関

連技術、Database関連技術の３分野になる。これらはいずれもWBTの基礎技術であることから、これらを総合してWBT技術の移転という言葉でまとめてある。具体的な内容は以下の表－２に示したとおりである。

表－２

Technology		Theory	Practice	Contents of technology and knowledge
Multi-media	Basic	△	△	- Various kinds of medias - Simple content development using multimedia
	Application	○	○	- Advanced skills for producing multimedia (image, sound, video) - Internet multimedia streaming media, compression technique, and transmission band
Network	Basic communication line	△	△	- Basic theory (encoding, multiplexing, transmission method, etc) - Types and features of communication lines - Types and features of transmission procedures - Types and features of commercial communication line service
	Information system management and administration	○	○	- Method of operation management (resource, facility and user maintenance, security and performance management) - Internet technology - Concept of intranet - Methods of building intranet (setting of server, CGI)
Database	Basic database system	△	△	- Types and principles of DB - RDBMS/SQL - Basic methods of design - Techniques of building database system
	Software design	○	○	- Structured programming/object oriented programming/visual programming - Algorithm application and efficiency (Hash/compression/encryption/etc, calculated amount) - Design of user interface - Differences in software design method between procedural and event-driven systems - Types of software tests and techniques of designing software tests
WBT	Design/development of WBT application	○	○	- Design and development of WBT methodologies - Production of teaching materials for WBT
R&D	Enhancement of R&D capability in WBT	○	○	- Strengthen R&D methodologies - Implementation of R&D in a few areas

○：Technology and knowledge transfer is necessary.
△：Technology and knowledge are acquainted by C／Ps, but the updated one is to be transferred.

各分野の詳細については、勉強会で配布された資料と本質的に異ならないが、今後プロジェクトの進行に合わせて、一部修正されることは十分にあり得る。また、基礎部分については、ICTのC／Pはすべて習得しているということなので、最近確立された新しい基礎理論などについてのみの技術移転を行うことにした。短期専門家はC／Pの基礎知識を確認しながら、適宜基礎理論の講義をすることに心がけるべきであろう。

2） 第１年目の技術移転

１年目の技術移転として以下の項目があげられた。

１．Field

1) Multimedia (4 months)

a. Audio/Visual Production

b. Web casting technology

c. Multimedia application

d. Instructional media design

2) Database management (2 months)

3) Security management (2 months)

a. Server level security

b. Internet security

4) Internet technology (1 month)

a. TCP/IP

b. Internet networking

c. WWW server technology

２．Activity objectives

Capacity building of ICT C／Ps in WBT

３．Activity items

a. To give lecture, workshop, demonstration and lab sessions

b. To give advise for development of WBT materials

４．C／P Names (long list of 8 candidates for WBT and 4 candidates for R&D)

Refer to the Minutes.

５．Dispatch period

The experts mentioned 1. should be dispatched during following period.

1)-a July 2002 (1 month)

1)-c Middle of July 2002 (1 month)

4)-a, b, c Mid August 2002 (1 month)

1)-d Mid September 2002 (1 month)

3) Mid September 2002 (2 months)

2) November 2002 (2 months)

1)-b January 2003 (1 month)

表－３

Calendar Year	2002												2003					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Japanese Fiscal Year	2001			2002												2003		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
III. Dispatch of Short-Term Experts																		
1. Multimedia																		
(1) Audio/Visual Production							■											
(2) Web Casting Technology															■			
(3) Multimedia Application								■										
(4) Instructional Media Design									■									
2. Database Management										■	■							
3. Security Management (Server level, Internet)													■	■				
4. Internet Technology									■									
5. WBT methodology development (Model subject A)																	■	■
Short-term experts (2~4) will be dispatched, if necessary. 6. R/D management and/or Seminar (daisy)																		

（付属資料３．のミニッツのAnnexより抜粋）

〈C／P Training in Japan (Three candidates)〉

１．Field

WBT

２．Training objectives

To understand what WBT is, how WBT concept is designed and developed, what/ how methods, materials and applications are used.

３．Training Items

Participate in OTC training course and observe the institutions involving in developing and conducting of WBT.

４．C／P names

Refer to the Minutes.

５．Training Period

June 2002 (1 month)

６．Others

3） 技術移転の流れ

日本側からの技術移転の骨子としては以下のように考えられる。

第１年次の技術移転：

上記表に掲げたWBT要素技術に関する基礎的並びに中級レベルの知識・技術の移転

第２年次の技術移転：

上記表に掲げたWBT要素技術に関する上級レベルの知識・技術の移転

第３年次の技術移転：

技術移転の最終年であり、直接C／Pが各人でWBT教材の開発を実施するための技術移転を行う。

4） R&Dのテーマ

ICTは以下に示す６名のスタッフの研究プロポーザルを提出してきた。

① Dr. N. D. Kodikara

“Virtual Reality Systems in Education”

・High immersing virtual reality approach will be taken to develop the education materials for medical and chemistry fields.

② MJPU Samanthilaka

“Web Caching Techniques Suitable for the Local Environment”

・New Caching method will be developed.

・Where a web-caching server should be located considering the community use.

・Developing country can use the method developed by this project.

・Generalize the method from the model data analysis.

・One and a half years are used for data collection and analysis of data. Some caching equipment is necessary to verify the estimation.

・New caching method will be developed with Japanese advisors.

③ Dr. D. N. Ransingle

“Development of novel programming subsystems and task specific parallel algorithms for cluster computing environments”

・Algorithm design will be developed for cluster computing system.

・In the developed algorithm, computing programmers do not need paying attentions on controlling and managing component, because message pass programming between component computers is very difficult.

④ Dr. A. P. Madurapperuma

“Multi Media information storage and retrieval system”

・Multimedia occupy the large memory on the disk and each media such as image,

sound, video and the others are coded by different file systems.

・One original file system was developed by the project leader.

・This project develops the unique coding file system applicable to any media and so, all the media data can be stored in one platform and retrieved effectively.

⑤ Ruvan Weerasinghe

"Multilingual information representation and manipulation"

Interview is not available, because he is in France.

⑥ S. T. Nandasara

"Of multilingual input/display method (Unicode compatible)"

・Shinhala language is a super language in the Asian country languages, because Shinhala has 47 characters and one character has 48 modifications. So, totally, 2256 (= 47 × 48) grips are used.

・Develop OS using Shinhala language, but as mentioned above, this is not an easy job.

・By developing Shinhala OS, population of information & communication technology in Sri Lanka will increase tremendously, because majority of Sri Lanka people cannot understand English.

本間は上記のプロジェクトリーダーに面談し、プロジェクト内容を確認することにした。上記がインタビューで確認した事項である。今回、⑤のリーダーがフランスに滞在中ということでインタビューできなかった。また、機材リストを作成していない研究者もおり、早急にリストの提出を求めている。

豊橋技術科学大学に持ち帰り、研究テーマに関連深い教官の評価をまって、採択研究テーマを決定する。

5) 大学間の連携体制と活動内容

ペラデニヤ大学とモラトワ大学を訪問し、ICTとのWBTに関する大学連携の可能性について調査した。ICTは今回のプロジェクト規模で３大学の積極的な連携を取り付けるには限界があることを主張した。他大学への機材供与を実施することはICTの機材供与を削減することになる。ICTの機能を将来的にも十分使用に耐えるものとすることを基本に置けば、他大学には非常に限定された機材しか供与できない。したがって、今回のプロジェクト規模では大学間連携を十分に機能させるに至らないとの判断から、他の大学の参加は限定された形とならざるを得ない。

C／Pを２カテゴリーに分類すると、直接C／PとしてICTの若手スタッフが、そしてシニ

アスタッフが間接C／Pとなる。他大学からの参加者は直接C／Pから技術移転を受けることになる。

（3）WBT教材開発を行う分野

WBT教材を開発する分野については、少なくとも、

① 当プロジェクトでカテゴリー２、３のC／PにWBTを実施するための教材

② ICTの学生、あるいは講習者向けの教材

③ BITの学生向けの講義教材

をプロジェクト実施中に作成することにした。

８－２ 団員所見

今回の第２次短期調査団に参加し、このプロジェクトが具体的に形成される過程で、以下の点を感じた。

（1）スリランカ人、あるいは大学間のライバル意識は高い。主要大学は横並びで発展すべきとの意思がある。

（2）上記の状況下で、教育・高等教育省のこのプロジェクトに対するかかわりが希薄である。JICAが考えていたペラデニヤ大学、モラトワ大学の連携は、教育・高等教育省のイニシアティブで行えば、実現した可能性が考えられる。しかし、本プロジェクトに両大学を主要C／Pとして参画させることの是非は別問題である。

（3）本プロジェクトでR&Dを実施することは、スリランカ側にある程度のインパクトを与えるものと考えられる。この観点から、上記２大学に対しても同様のR&Dを実施させる機会を提供できるよう、JICAも考慮すべきであろう。

（4）Virtual University Conceptによる３大学の連携は、依然として３大学の教官に生きている。現在、このプロジェクト形成の動きはないようであるが、今後、この構想を実現するように、JICAは何らかの手を講じてもよいのではないか。もちろん、Ownershipの考えからすれば、スリランカ側はプロジェクト形成に向けた動きをとるべきである。この件に関しては、豊橋技術科学大学工学教育国際協力研究センターが協力していくことにやぶさかではない。

THE MINUTES OF MEETING BETWEEN THE JAPANESE SECOND PREPARATORY STUDY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA ON THE JAPANESE TECHNICAL COOPERATION FOR CAPACITY BUILDING PROJECT OF THE INSTITUTE OF COMPUTER TECHNOLOGY, UNIVERSITY OF COLOMBO

The Japanese Second Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Koichi Takizawa visited the Democratic Socialist Republic of Sri Lanka for the purpose of preparing the Capacity Building Project of the Institute of Computer Technology, University of Colombo (hereinafter referred to as "the Project").

During its stay in the Democratic Socialist Republic of Sri Lanka, the Team had several meetings and exchanged views with the Sri Lankan authorities over the matters for the successful implementation of the Project.

The attached document hereto is intended to record the understanding reached between both sides through meetings.

Colombo, 27 November, 2001

Mr. Koichi TAKIZAWA
Leader,
The Second Preparatory Study Team,
Japan International Cooperation Agency,
Japan

Prof. V.K. Samaranayake
Director
Institute of Computer Technology
University of Colombo
Democratic Socialist Republic of Sri Lanka

Mr. A.M. Chandrapala
Additional Secretary
Ministry of Education &Higher Education
Democratic Socialist Republic of Sri Lanka

Ms. Sujatha Cooray
Director
Department of External Resources
Ministry of Finance & Planning
Democratic Socialist Republic of Sri Lanka

Attached Document

I Specific Items regarding the Project

1 Title of the Project

The Team suggested and the Institute of Computer Technology, University of Colombo (hereinafter referred to as "the ICT") agreed that the name of the Project would be "Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo" and the ICT will initiate action to change the name of the Project.

2 Master Plan of the Project

The team explained the contents of the Project Document (November 26, 2001 version) and the Sri Lankan side understood the concept of the Document.

Both sides agreed on the Master Plan of the Project based on the above Document. The summary of the Master Plan is shown in the following tables.

1) Project Design Matrix (PDM as in Annex 1)
2) Plan of Operation (PO as in Annex 2)
3) Tentative Implementation Plan (TSI as in Annex 3)

Both sides also agreed on the following table, lists and figures used to explain details of the above Master Plan.

1) Budget of the ICT (Annex 4-1) and estimated budget for the Project to be borne by the ICT (Annex 4-2)
   (Note: These estimates need to be approved by relevant government authorities before signing of Record of Discussion)
2) List of the Sri Lankan counterparts (C/Ps as in Annex 5)
3) List of machinery and equipment to be provided by the Japanese side (Annex 6)
4) Layout plan for the above mentioned machinery and equipment (Annex 7)

Regarding the above machinery and equipment, the team requested the Sri Lankan side and the latter agreed that the Sri Lankan side would make necessary arrangements for the system configuration plan, dedicate internet line, securing sufficient rooms including multi-media studio with separate narration booth, equipped with necessary furniture, electricity infrastructure, air conditioners, telephone lines and so forth before the installment of machinery and equipment.

3 Allocation of counterpart personnel

Both sides understood that C/Ps of the ICT lecturers and/or instructors who are to directly receive technology transfer from Japanese Experts, would be regarded as Direct C/Ps, on the other hand, the C/Ps of the ICT lecturer and/or instructors who would be involved in the Project on a part time basis would be regarded as Indirect C/Ps.

The Team suggested to the Sri Lankan side and the latter understood that following:

Direct C/Ps would be in charge of training WBT content developers and/or IT trainers from universities, private IT training institutes and industries at the ICT and would collaborate in this endeavor with the Indirect C/Ps. Indirect C/Ps would have the opportunity to join in receiving technology transfer with Direct C/Ps directly from Japanese Experts.

4 Development of WBT material

Both sides agreed that, regarding material development for WBT, the Project would develop six (6) kinds of materials in selected areas in the following fields during the Project period. The team explained to the Sri Lankan side and the latter understood the following

points:

(1) On the first stage, the Project would develop and utilize WBT materials for selected subjects in IT field for the ICT students so that the materials could be used, tested and revised with feedback. One (1) WBT material which would be developed by the Project accordingly is WBT material for training course for WBT content developers and/or IT trainers to be held at ICT.

(2) On the second stage, the project would develop
   a) WBT material which would be shared among universities and training institutes
   b) WBT material for Bachelor of Information Technology (hereinafter referred to as "BIT") courses of the ICT which would be shared among several training institutes

The materials would be saved in the ICT servers and accessed and utilized by universities for free of charge and/or by IT training institutes at cost.

5 Research and Development Activities in the Project

Both sides understood that methodology for Research and Development (hereinafter referred to as "R&D ") would be transferred from Japanese Experts as one scope of the Project activities.

The Team also explained to the Sri Lankan side and the latter understood that the Project would implement two (2) kinds of R&D activities under the supervision of Japanese Experts during the Project period, and those R&D themes should be related to WBT, and would be determined through examination by the Japanese side on the proposal submitted by the Sri Lankan side.

The Japanese side would select the R&D themes depending on the following points as the Project preferences:

1) The R&D theme in sector which has potential for future development
2) The R&D theme which does not require much resources
3) The R&D theme which the Project can execute in corporation with universities in Japan
4) The R&D theme which is appropriate to be presented in domestic or international academic meetings

In addition, both sides agreed that necessary machinery and equipment for R&D would be provided by the Japanese side within the budget allocated for the Project, while local cost for R&D would be born by the Sri Lankan side.

6 Diffusion of WBT technologies

Both sides agreed that the Project would aim to train a total of two hundred (200) WBT content developers and/or IT trainers from universities, private IT training institutes and industries through training courses of the ICT.

Both sides also agreed that the Sri Lankan side would promote participation in the training for WBT content developers and IT trainers held at the ICT by teaching staff and researchers from universities, particularly from University of Colombo, University of Moratuwa, University of Peradeniya, University of Kelaniya and University of Ruhuna.

Therefore, both sides agreed that the Sri Lankan side would take necessary action to grant those participating members from universities study leave including salary and other normal entitlements.

7 Joint Coordinating Committee (JCC)

Both sides understood the importance of the role of the Joint Coordinating Committee (hereinafter referred to as "the JCC") of the Project for coordination and cooporation among universities and industries in order to share and diffuse achievement of the Project, and both sides agreed to the tentative member list of the JCC as shown in Annex 8.

Both sides also confirmed that there would be an Industry - University Forum as a mechanism for the JCC to listen to the voice of the beneficiaries including industries and universities, and both sides agreed the tentative member list of the Industry - University Forum as shown in Annex 9.

8 Schedule for the Implementation of the Project

The team explained and the Sri Lankan side agreed on the schedule of the implementation of the Project as follows.

February 2002 Signing of the official agreement of the Project (the Record of Discussion)

June 1 2002 Launching of the Project and assigning of two long-term experts

9 Procurement of machinery and equipment

(1) For the smooth installment of machinery and equipment, the team explained to the Sri Lankan side and the latter agreed that the Sri Lankan side should both sign and submit A4 form for machinery and equipment to the Japanese side at the same time when both sides sign the Record of Discussion.

(2) The Team explained to the Sri Lankan side and the latter agreed that in principle, machinery and equipment provided for the Project by the Japanese side should be exempted from the taxes (customs duties, internal taxes and any other charges imposed in Sri Lanka). However, in case these tax exemptions are not possible, the Sri Lankan side should bear such the taxes. The Team explained to the Sri Lankan side that the estimated budget for the machinery and equipment would be approximately JPY 100 ～120 million.

II List of Attendance

A list of attendance of the meeting is shown in ANNEX 10.

Annex 1 PDM (Project Design Matrix)

Project Title: "Capacity Building Project of the Institute of Computer Technology"
Project Period: June 1, 2002 - May 31, 2005
Target Places: Colombo in the Democratic Socialist Republic of Sri Lanka
Target group: Teaching staff and researchers at ICT, universities and IT training institutes
Drafted by : JICA second Preparatory Study Team 26 November 2001
Trainees of various IT training courses at ICT

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall goal - Both quality and quantity of IT related human resources in Sri Lankan industries are improved.	1. Number of skilled IT personnel in industries, trained at ICT, increases at certain rate of growth. 2. IT utilization in industries improves both in terms of quantity of personnel and technology level	1. Review of statistical records at ICT 2. Field research (questionnaire and interview survey) by ICT, FITIS, and so forth	- There is no drastic change in political and economic situation in Sri Lanka - Continual, effective planning implementation of IT policies measures in industries, particularly in IT sector
Project purpose - ICT increases its capacity in conducting IT trainings that match with the needs of Sri Lankan industries in a more effective and efficient manner for IT related staff in universities, IT training institutes and industries	1. 24 ICT staff improve their skills for the implementation of WBT. 2. 680 ICT trainees receive WBT training, and more than 1,000 benefit from WBT developed by the Project.	1-1. Statistics and records at ICT (Qualification and training records etc.) 1-2. Questionnaire and interview survey 2-1. Records at ICT and access record on WEB	
Outputs 1. Organization functions of ICT are strengthened. 2. C/Ps acquire necessary IT skills and technologies for the implementation of WBT. 3. ICT provides IT training courses that meet the needs of universities, IT training institutes and industries 4. R&D capabilities relating to WBT are strengthened in the ICT.	1. Number and capability of staff, budget and established management system are increased/enhanced. 2-1. 6 advanced instructors in WBT are developed in ICT 2-2. 18 trainers for WBT content developers/IT trainers are developed in ICT 3-1. 6 different sets of basic WBT materials are prepared. 3-2. 4 WBT training modules are implemented as model cases. 3-3. 200 WBT content developers/IT trainers in universities, IT training institutes and industries are trained. 3-4. 12 different modules are introduced and a total of 480 students are trained in relation to WBT at ICT. 3-5. 1,000 IBT students get training through WBT. 4. At least 2 academic papers related to WBT are presented at domestic or international, academic meetings.	1. Statistics and records at ICT (Allocation of personnel, budget, etc.) 2-1. Records at ICT (Number of courses instructed by trainers who receive technical transfer by the Project) 2-2. Evaluation by the Joint Coordinating Committee 3-1. Records at ICT (Number of WBT materials) 3-2. Records at ICT (Number of implemented WBT) 3-3. Records at ICT (Number of trainings, number of trainees by type of organization) 3-4. Records at ICT (Number of WBT module registration and passed number for those modules) 3-5. Records on the WEB (Access number, etc.) 4. Records at either ICT or academia	
Activities 1-1. Establishment of Project Operation Unit for implementation and administration 1-2 Collection and dissemination of Project-related information 1-3. Strengthening cooperation/coordination with other IT related institutions/organizations 2-1 Further development of multimedia application technology 2-2 Further development of computer network technology 2-3 Further development of information system management administration technology 2-4 Further development of database system management administration technology 2-5 Trainers' training of WBT content developers/IT trainers 3-1 Clarification of needs for training courses and review of the current courses 3-2 Preparation of curricula, course plans and teaching materials 3-3 Development of WBT methodologies 3-4 Production of teaching (WBT) materials 3-5 Training of WBT content developers/IT trainers 3-6 Implementation of training courses at ICT 4-1 Further development of R&D methodologies 4-2. Implementation of R&D	Input The Japanese side Experts: 2 Long-term experts(Chief advisor, Technical coordinator) 4-8 short-term experts in IT per year (Technology transfer of WBT) 2-4 short-term experts in R&D per year (R&D in WBT) (Total of 40 M/M at maximum for the project period) Equipment: Equipment for development such as PC, Server and related software Equipment for training such as PC, Server, network equipment and related software Training in Japan: 0-3 members per year	The Sri Lankan side C/P Personnel: Direct C/P: 6 Indirect C/P: 18, of which 2 are also R&D C/P Facilities: Facilities for training and R&D at the ICT Local cost: Operating costs for the Project	- Trained C/Ps and trainers remain in their working field in IT related training - Communication and coordination with other universities and IT training institutions are properly managed by the Industry - University Forum with the guidance of JCC, UGC and the Ministry of Education and Higher Education - Information and communication infrastructure in Sri Lanka keeps the current level, and preferably advances

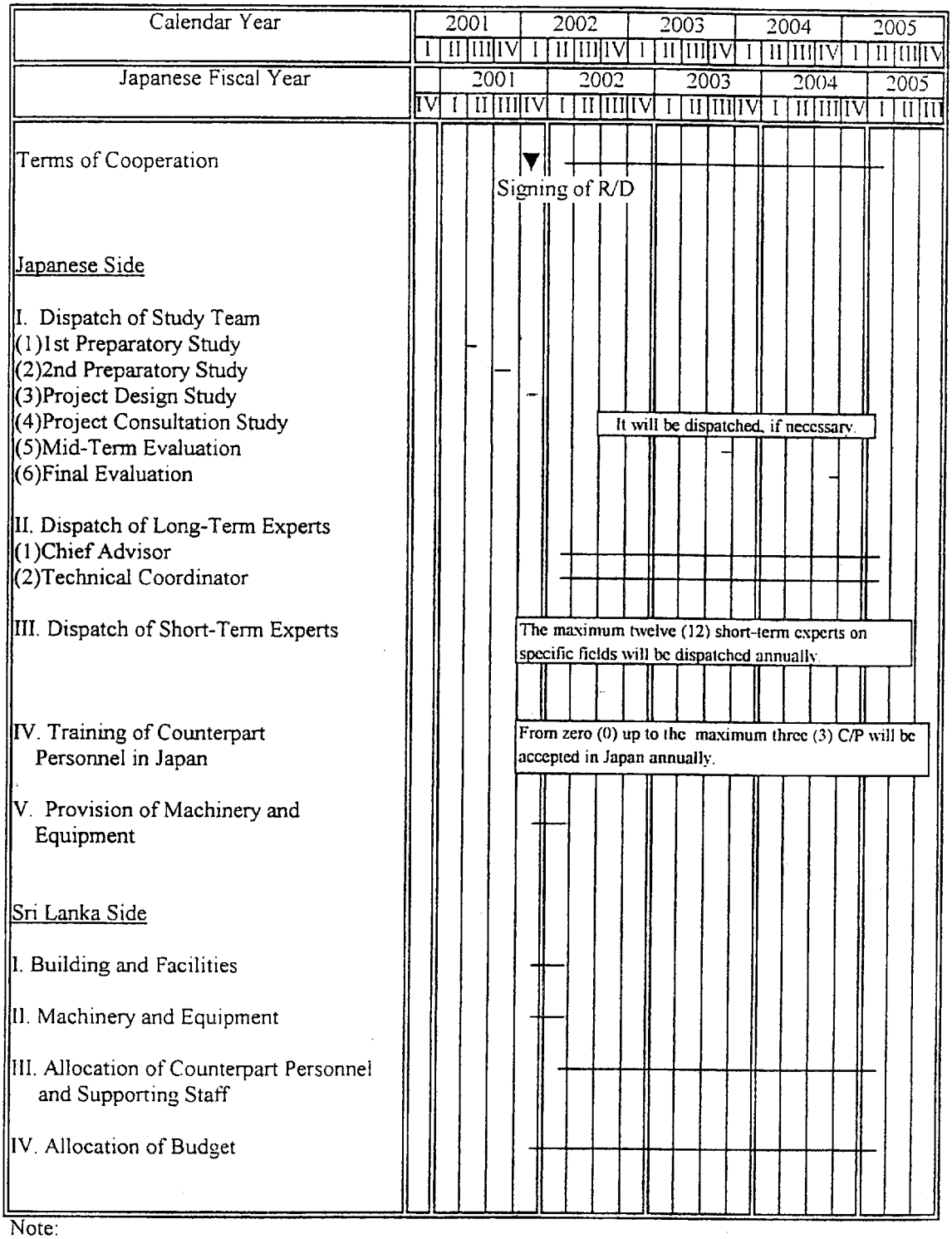
Annex 2 Plan of Operations (PO)

Project period: from June 1, 2002 to May 31, 2005

26 November 2001

Activities	Details of Activities	Schedule (Calendar year, quarter)													Inputs	Outputs
		2002			2003				2004				2005			
		(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)		
Strengthening institutional framework of conducting trainings using IT	Establishment of Project Operation Unit for implementation and administration	Allocation of personnel & budget, usage and maintenance of machinery and equipment properly													Japanese long-term experts PD, PCM CP	- Organization/functions of ICT are strengthened.
		Planning of operation schedule for every year							Administration				Monitoring and evaluation			
	Collection and dissemination of Project-related information	Collection/dissemination of related/necessary information														
	Strengthening cooperation/ coordination with other IT related institutions/organizations															
Strengthening IT-related skills and technologies	Further development of multimedia application technology														Japanese short-term experts (several) CP Hardware for development Software for development Hardware for training Software for training	- C Ps acquire necessary IT skills and technologies for the implementation of WBT.
	Further development of computer network technology															
	Further development of information system management administration technology															
	Further development of database system management administration technology															
	Trainers' training of WBT content developers/IT trainers															
Implementation of trainings using IT	Clarification of needs for training courses and review of the current courses														Japanese short-term experts (several) CP Hardware for development Software for development Hardware for training Software for training	- ICT provides IT training courses that meet the needs of universities, IT training institutes and industries.
	Preparation of curricula, course plans and teaching materials															
	Development of WBT methodologies				Design/development/evaluation in courses A, B, C				Design/development/evaluation in courses D, E, F							
	Production of teaching (WBT) materials				Design/development/evaluation in courses A, B, C				Design/development/evaluation in courses D, E, F							
	Training of WBT content developers/IT trainers				Training for WBT courses A, B, C				Training for WBT courses D, E, F							
	Implementation of training courses at ICT															
Strengthening R&D capabilities in WBT	Further development of R&D methodologies														Japanese short-term experts (several) CP Hardware for R&D Software for R&D	- R&D capabilities relating to WBT are strengthened in the ICT
	Implementation of R&D				Research and development in fields X & Y											

Annex 3 Tentative Schedule of Implementation (TSI)



Note:

1.Japanese fiscal year starts in April and ends in March.

2.This schedule is subject to change if necessary, such as with the progress / budgetary constraint of the P

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Annex 4 -1 Budget of the ICT

Institute of Computer Technology - University of Colombo

Estimate of Recurrent Expenditure for the Year 2002 - 2005

Account Description	Code	Expenditure as per Draft Accounts 2000	Estimated expenditure for the year 2001	Actual 2001 Jan - May	Expected 2001 Note 2	Year 2002 Estimated	Year 2003 Estimated	Year 2004 Estimated	Year 2005 Estimated
Account Description									
Income									
Government Grant	1	7,085,000.00	8,710,000.00	3,268,200.00	8,710,000.00	10,250,000.00	11,275,000.00	12,402,500.00	13,642,750.00
Other Grants	2	0.00	700,000.00	0.00	1,500,000.00	1,500,000.00	1,650,000.00	1,815,000.00	1,996,500.00
Internal Revenue	3	2,874,794.13	4,000,000.00	236,718.00	2,989,500.00	3,000,000.00	3,300,000.00	3,630,000.00	3,993,000.00
		9,959,794.13	**13,410,000.00**	**3,504,918.00**	**13,199,500.00**	**14,750,000.00**	**16,225,000.00**	**17,847,500.00**	**19,632,250.00**
Expenditure									
Personal Emoluments	4	6,607,635.64	8,510,000.00	3,196,861.79	8,439,715.13	9,283,686.64	10,212,055.30	11,233,260.83	12,356,586.92
Travelling & Subsistance	25	14,130.90	220,000.00	2,061.40	5,442.10	14,367.13	15,803.84	17,384.23	19,122.65
Supplies	6	297,141.25	740,000.00	200,610.89	529,612.75	582,574.02	640,831.42	704,914.56	775,406.02
Mantenance	7	298,607.02	750,000.00	272,113.25	718,378.98	790,216.88	869,238.57	956,162.42	1,051,778.67
Contractual Services	8	1,980,638.18	1,500,000.00	805,279.29	2,125,937.33	2,338,531.06	2,572,384.17	2,829,622.58	3,112,584.84
Other Recurrrent Expences	9	683,345.56	1,490,000.00	480,236.85	1,267,825.28	1,394,607.81	1,534,068.59	1,687,475.45	1,856,223.00
Financial Assistance to Students	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GELT Programme	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backlog Clearence	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		9,881,498.55	**13,210,000.00**	**4,957,163.47**	**13,086,911.57**	**14,403,983.54**	**15,844,381.89**	**17,428,820.08**	**19,171,702.09**

Annex 4-2

Estimated Budget for the Project 2002 - 2005

		2002	2003	2004	2005
Recurrent Expenses:		Rs.	Rs.	Rs.	Rs.
Personal Emoluments	Note 1	2,000,000.00	2,200,000.00	2,420,000.00	2,662,000.00
Maintenance		1,000,000.00	1,100,000.00	1,210,000.00	1,331,000.00
Utility Services	Note 2	3,500,000.00	3,850,000.00	4,235,000.00	4,658,500.00
Contractual Services	Note 3	2,000,000.00	2,200,000.00	2,420,000.00	2,662,000.00
Other Recurrent Expenses		1,000,000.00	1,100,000.00	1,210,000.00	1,331,000.00
Capital:					
Furniture & Fittings - Cost		1,500,000.00	500,000.00	500,000.00	500,000.00
Equipment Local Component	Note 4	16,000,000.00	-	-	-
Rehabilitation:					
(Special Constuction - Labs, Studio etc.)		8,000,000.00	-	-	-
		35,000,000.00	**10,950,000.00**	**11,995,000.00**	**13,144,500.00**

Note 1

Personal Emoluments consist of payments to the following staff

Instructors - 6 (Salary Scale BS2)
Media Officer 1 (Salary Scale A4)
Media Technology Assistant 4 (Salarry Scale A6)
Computer Application Assistant 3 (Salary Scale A8)

Note 2

Utility Services include payments for water, electicity, telephone and internet connectivity etc

Note 3

Constructional Services include payment for secirity services, cleaning, pest control etc.

Note 4

The Local component for year 2002 (GST, NSL, Stamp duty cleaning etc.
on the import of equipment worth of JPY 100-120 Milions)

Annex 5- 1 **The List of Counterpart Personnel (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
Direct Counterparts				
1. Mr. C. M. B. Atthanayake	Male	27	**Project Assistant** Computing Services Center	1. **Consultant** Ministry of Finance and Planning in Y2K project From Januar1999 y – January 2000 2. **Participated the training program on Software Quality Assurance** From June 2000 - August 2000 3. **Participated on the training program at CICC Tokyo Japan on Client server system development and won the "Best Achievement Award"** From May 2001 - July 2001
2. Mr. G.P.N. Boteju	Male	33	**Instructor (Gr. 11)**	1. **Project Assistant** From June 1999 – Feb 2001. Computing Services Center, Institute of Computer Technology 2. **Instructor (Gr. 11)** From Feb 2001 – To date Institute of Computer Technology
3. Mrs. M. W. A. C. R. Wijesinghe	Female	30	**Instructor**	1. **Project Assistant** From Oct 2000 – Feb 2001 Computing Services Center, Institute of Computer Technology 2. **Instructor** From Feb 2001 – To date Institute of Computer Technology
Three more new carder positions (Instructors) will be created by June, 2002 as direct counterpart for the project				

Annex 5- 2 The List of Counterpart Personnel (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
Indirect Counterparts				
1. Mr. M J P U Samanthilaka	Male	41	**Information Systems Manager**	1. **Computer Engineer** ICL – International Computers Limited From April 1981 – April 1982 2. **Computer Field Service Engineer** Dataserve Ltd From Apri1982 1 – August 1987 3. **Engineer** Institute of Computer Technology From September 1987 – October 1998 4. **Information Systems Manager** Institute of Computer Technology From October 1998 – to Date
2. Mr. S T Nandasara	Male	49	1. **Lecturer in Information Technology** 2. **Course Director** Third Country Training Programme in Information Systems Engineering 3. **Senior Consultant to the Computing Services Center,** University of Colombo	1. **Research Assistant** From January 1980 – March 1981 Department of Pharmacology, Faculty of Medicine University of Colombo, Sri Lanka 2. **Technical Assistant** From April 1981 – December 1982 Statistical Unit, Department of Mathematics Faculty of Science, University of Colombo ,Sri Lanka. 3. **Statistical Officer** From January 1983 – November 1987 Dept. of Statistics and Computer Science, Faculty of Science, University of Colombo, Sri Lanka 4. **Instructor in Computer Technology – Grade II** From November 1987 – November 1992 Institute of Computer Technology (ICT),

Annex 5-3 The List of Counterpart Personnel (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
				University of Colombo, Sri Lanka 5. **Instructor in Computer Technology – Grade I** From November 1992 - May 1996 Institute of Computer Technology (ICT), University of Colombo, Sri Lanka 6. **Information Technology Consultant** From July 1992 – May 1993 Asian Institute of Technology, Bangkok, Thailand & Ministry of Policy Planning & Implementation, Colombo, Sri Lanka. 7. **Lecturer in Computer Technology** From May 1996 – to date Institute of Computer Technology (ICT), University of Colombo, Sri Lanka.
3. Mr. G K A Dias	Male	39	**Senior Lecturer**	**1. Trainee Computer Programmer** From Nov. 1982 – May 1984 Computer Center, Mathematics Department, University of Colombo **1. Computer Programmer/ Systems Analyst Grade II** June 1984 - Dec. 1985 Computer Center, Mathematics Department, University of Colombo **1. Computer Programmer/ Systems Analyst Grade II** Jan. 1986 - Dec. 1989 Department of Statistics and Computer Science, University of Colombo. **4. Computer Programmer/ Systems Analyst Grade I** From Jan. 1990 - Oct. 1996

Annex 5-4 **The List of Counterpart Personnel (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
				Department of Statistics and Computer Science, University of Colombo
4. Mr. K S Goonatillake	Male	41	**1. Senior Engineer (Computer Maintenance)** **2. Course Coordinator** Computer Aided Drafting using AutoCAD **3. Course Coordinator** Upgrading and Maintenance of Personal Computer Systems **4. Course Coordinator** Advance AutoCAD	**1. Technical Research Assistant** From Oct. 1984 – Feb. 1985 Computer Center, Dept. of Mathematics, University of Colombo **2. Training Programmer/Instructor** From Feb 1985 – July 1987 Dept. of Mathematics, University of Colombo **1. Engineer (Computer Maintenance)** From July 1987 – July 1999 Institute of Computer Technology University of Colombo. **1. Senior Engineer (Computer Maintenance)** From July 1989 – To date Institute of Computer Technology University of Colombo.

Annex 5- 5 The List of Counterpart Personnel (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
5. Mr. L. P. Jayasinghe	Male	42	**1. Instructor (Gr.1)** (Computer Technology) **2. Course Coordinator-** Postgraduate Diploma in Computer Technology **3. Course Coordinator-** Certificate Course in the use of Information Technology for Development. **1. Academic Coordinator** for the First – Bachelor of Information Technology (External)	**1. Trainee Computer Instructor** From Nov 1984 – March 1986 Dept. of Statistics and Computer Science **1. Research Assistant** From April 1986 – June 1986 Council for Information Technology (CINTEC) **1. Computer Programmer** From July 1986 – Aug.1987 Council for Information Technology (CINTEC) **4. Instructor (Computer Technology)** Institute of Computer Technology **1. Coordinator Training (Contract Basis)** From March 1998 – March 1999 Computing Services Center **1. Coordinating Manager (Contract Basis)** From January 2001 – May 2001 Computing Services Center
6. Mr. P A D Sunil	Male	38	**Instructor (Gr. II)**	**1. Research Assistant** From Feb 1988 – Aug 1988 Council for Information Technology (CINTEC) **2. Systems Operator (Main Frame)** From Aug 1988 – Jan 2000 Institute of Computer Technology University of Colombo **3. Instructor (Gr. II)** From Jan 2000 – To date Institute of Computer Technology
7. Dr. N D Kodikara	Male	46	**Senior Lecturer in Computer Science (Grade I)** Department of Computer	**1. Statistical Officer** From Aug. 1979 - Aug. 1980 Statistical Unit, Department of Mathematics University of Colombo

Annex 5-6 **The List of Counterpart Personnel (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
			Science 1. **Resource Person** Third Country Training Programs (ICT) 2. **Conducting CSC short courses –** Virtual Reality Modeling Three Dimensional Graphics Modeling.	2. **Research Assistant** From Sept. 1980 – Aug. 1981 Statistical Unit, Department of Mathematics University of Colombo 3. **Computer Programmer/ Systems Analyst** From Aug. 1981 to Oct. 1984 Statistical Unit, Department of Mathematics University of Colombo 4. **Assistant Lecturer** From Oct. 1984 - March 1989 Department of Statistics and Computer Science University of Colombo 5. **Senior Lecturer (Grade II)** From March 1989 – March 1995 Department of Statistics and Computer Science University of Colombo
8. Dr. D N Ranasinghe	Male	41	**Senior Lecturer (Gr. II)** Department of Computer Science	

Annex 5-7 **The List of Counterpart Personnel (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
9. Dr. Ajith P. Madurapperuma	Male	40	1. **Member Academic Committee** 2. **Visiting Lecturer** 3. **External Examiner** 4. **Former Staff member**	1. **Senior Lecturer in Computer Science** From 1997 – to date 2. **Senior Consultant** **CINTEC (Council for Information Technology)** 3. **Computing Services Center,** From 1997 – to date University of Colombo 4. **Research Student and Technical Support Officer** Department of Computer Science, University of Wales Cardiff, P.O. Box 916, Cardiff Wales, United Kingdom 5. **Lecturer in Computer Science,** From 1991 – 1992 Department of Statistics and Computer Science, University of Colombo 6. **Instructor,** From 1990 – 1991 Institute of Computer Technology, University of Colombo 7. **Student** (Master of Science), From 1989 – 1990 Department of Computer Science, University of Wales Cardiff, P.O. Box 916 8. **Instructor,** From 1988 – 1989 Institute of Computer Technology, University of Colombo
10. Dr. A. R. Weerasinghe	Male	41	**Director,** From 2001 Apr – July 2000	**1. Senior Lecturer**

Annex 5-8 **The List of Counterpart Personnel (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
11. Dr. G. N. Wickramanayake	Male	41	**1. Senior Lecturer (Gr. II)** Department of Computer Science, University of Colombo **1. BIT Academic Coordinator** **3. Member BIT** **4. Academic Committee** **7. Visiting Lecturer** **8. External Examiner** **9. Consultant** Computer Services Center, ICT	**1. IT Consultant** 2. **Senior Lecturer Grade II,** From 1996 – 2001, Department of Statistics & Computer Science, University of Colombo 3. **Post Graduate Research Student,** From 1991 – 1996, Department of Computer Science, University of Wales, Cardiff 4. **Lecturer** From 1990 – 1991, Department of Statistics & Computer Science, University of Colombo 5. **Post Graduate Student,** From 1988 – 1989, Master of Computer Science, Department of Computing Mathematics, University of Wales, Cardiff 6. **Systems analyst cum Programmer,** From 1988 – 1990, Department of Statistics & Computer Science, University of Colombo 7. **Assistant Lecturer** From 1985 – 1988, Department of Statistics & Computer Science, University of Colombo 8. **Technical Research Assistant,** Department of Statistics & Computer Science, University of Colombo
12. Dr. D. D. Karunaratne	Male		**Senior Lecturer (Gr. 11)**	

Annex 5-9 The List of Counterpart Personnel (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
13. Mr. G. P. Seneviratne	Male	38	**1.Senior Lecturer (Gr. II)** **2. Examiner/ Module Coordinator** **3. BIT Coordinator** **4. Coordinator MSc. In Computer science** **5. Resource person/CSC** **6. Visiting Lecturer/ICT**	**1. Trainee Analyst/ Programmer (Temp)/ Research Assitant(Temp)** From Nov 1984 – Feb 1988 **2. System Analyst/Programmer** From March 1988 – June 1990 **3. Lecturer** From July 1990 – August 1996 **4. Senior Lecturer** **From** Sep 1996 – to date **1. Visiting Lecturer/Examiner** University of Kelaniya University of Sri-Jayawardenapura
14. Mr. D. A. S. Athukorala	Male	33	**Lecturer** Department of Computer Science	**1. Assistant Lecturer** From 1996-1997 University of Colombo **1. Lecturer** From 1997- to date University of Colombo
15. Mr. R Senanayake	Male	28	**Asst. Lecturer** Department of Computer Science	**1. Principal Investigator** Visual Computing Research Group
Two Lecturer and one Assistant Network Manager Posts are vacant at ICT. These personals will be available for the project as Indirect Counterparts.				

Annex 6-1 List of machinery and equipment to be provided by the Japanese side

JICA will start its procurement according to the priority provided in the tables below. The equipment to be provided will be subject to change due to the budgetaty conditions of Japan in future.

1. Servers Segment			
No	Item	Specification	Quantity
1	Main Server (Main File Server) OS	 MPU: Pentium 4, 1.7GHz or higher RAM: 1GB or more Monitor and Gigabit LAN card 2 for each Unix or RedHat Linux	1
2	Sub-Servers (Main File Server) OS	 MPU: Pentium 4, 1.7GHz or higher RAM: 1GB or more Monitor and Gigabit LAN card 2 for each Multi-OS (Windows 2000 server and RedHat Linux)	3
3	Sub-Servers for Video Streaming OS Software	 MPU: Pentium 4, 1.7GHz or higher RAM: 1GB or more Monitor and Gigabit LAN card 2 for each Multi-OS (Windows 2000 server and RedHat Linux) RealServer Professional 100 or more License	2
4	Sub-Servers for Distance Education Software OS	 MPU: Pentium 4, 1.7GHz or higher RAM: 1GB or more Monitor and LAN card WEB-CT(FREE LICENSE) Multi-OS (Windows 2000 server and RedHat Linux)	1

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Annex 6-2

2. Multimedia Development Segment			
No	Item	Specification	Quantity
5	PCs for Development OS	 MPU: Pentium4, 1.7GHz or higher RAM:512MB or more CDRW and DVD Autharing Hardware and Spftware 6 or more PCI card conectable Monitor and LAN card video Caputure card Windows 2000 Professional or Linux	6
6	Notebook PC for development/presentatio OS Software	 MPU: Pentium4, 1GHz or more RAM: 512MB or more Windows 2000 Professional or Linux MS Office	2
7	Development Software	For Creating Multimedia Contents	6
8	Network PS Laser Printer (Color)	 Parallel or USB, and LAN(100/10 Base-T) applicable	1
9	Network PS Laser (B & W)	 Parallel or USB, and LAN(100/10 Base-T) applicable	1
10	Flat Bed Scanner	1200DPI or more	1
11	35mm Film Scanner	Negative and Positive Fils Scanner	1
12	LCD Projector	ANSI 1500 Lumen or more	1
13	CD-R Automatic Duplicator		1
14	CD-ROM Printer		1
15	Software for handicapped person	Daisy	

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Annex 6-3

3. Multimedia Studio			
No	Item	Specification	Quantity
16	PC for Multimedia Studio OS	 MPU: Pentium4, 1.7GHz or higher RAM:512MB or more CDRW and DVD Autharing Hardware and Spftware 6 or more PCI card conectable Monitor and LAN card video Caputure card Windows 2000 Professional or Linux	1
17	Software	For Creating Multimedia Contents	1
18	Non-Linear Video Editing System	DV format Ternkey Editing System(Full Option)	1
19	DVCAM Recorder/Player	DVCAM Format	1
20	Digital Video Camera	DV format with I-Link, (Full Option)	3
21	Digital Still Camera	Digital with I-Link	3
22	Digital Scan Converter	PC to Video Signal Convert	1
23	Video Switcher	4 input or more	1
24	Audeio Mixer	8 input	1
25	VHS-VTR Duplicator	1 Input and 2output with Audiovisual Connecter	3
26	CD Player	For Sound Mixing	1
27	14inch Video Monitor	Monitoring for Editing and Studioshooting	5
28	Speaker set	Monitoring for Editing and Studioshooting	3
29	Lighting Kit	For Studioshooting	2
30	Microphone	Narration and Shooting, StudioShooting (redio transmit)	5

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Annex 6-4

4. Training for Multimedia			
No	Item	Specification	Quantity
31	PCs for Training OS	 MPU: Pentium4, 1.4GHz or higher RAM:512MB or more CDRW and DVD Autharing Hardware and Spftware 6 or more PCI card conectable Monitor and LAN card video Caputure card Windows 2000 Professional or Linux	40
32	Training Software	For Multimedia Contents	40
33	Network PS Laser Printer (B/W)	Parallel or USB, and LAN(100/10 Base-T) applicable	2
34	Flat Bed Scanner	1200DPI or more	2
35	Notebook PC for presentation OS	 MPU: Pentium4, 1GHz or more RAM: 512MB or more OS (Windows 2000)	2
36	Software for literacy	MS Office Xp Professional	2
37	LCD Projector	ANSI 1500 Lumen or more	2

5.Others			
No	Item	Specification	Quantity
38	Center Router	2wan,1Lan Router	1
39	Fire Wall	4 Gigabit Interfaces	1
40	Layer3 Gigabit Switcher	6 Gigabit Module or More	2
41	Layer2 Gigabit Hub	2 port for Gigabit and 100MB others(Totally48 port)	6
42	Gigabit Ethernet Cable	as necssary length	
43	Ethernet Cable	100 baseT(as necssary length)	
44	UPS	30KVA 3Phase with 5PDB	1

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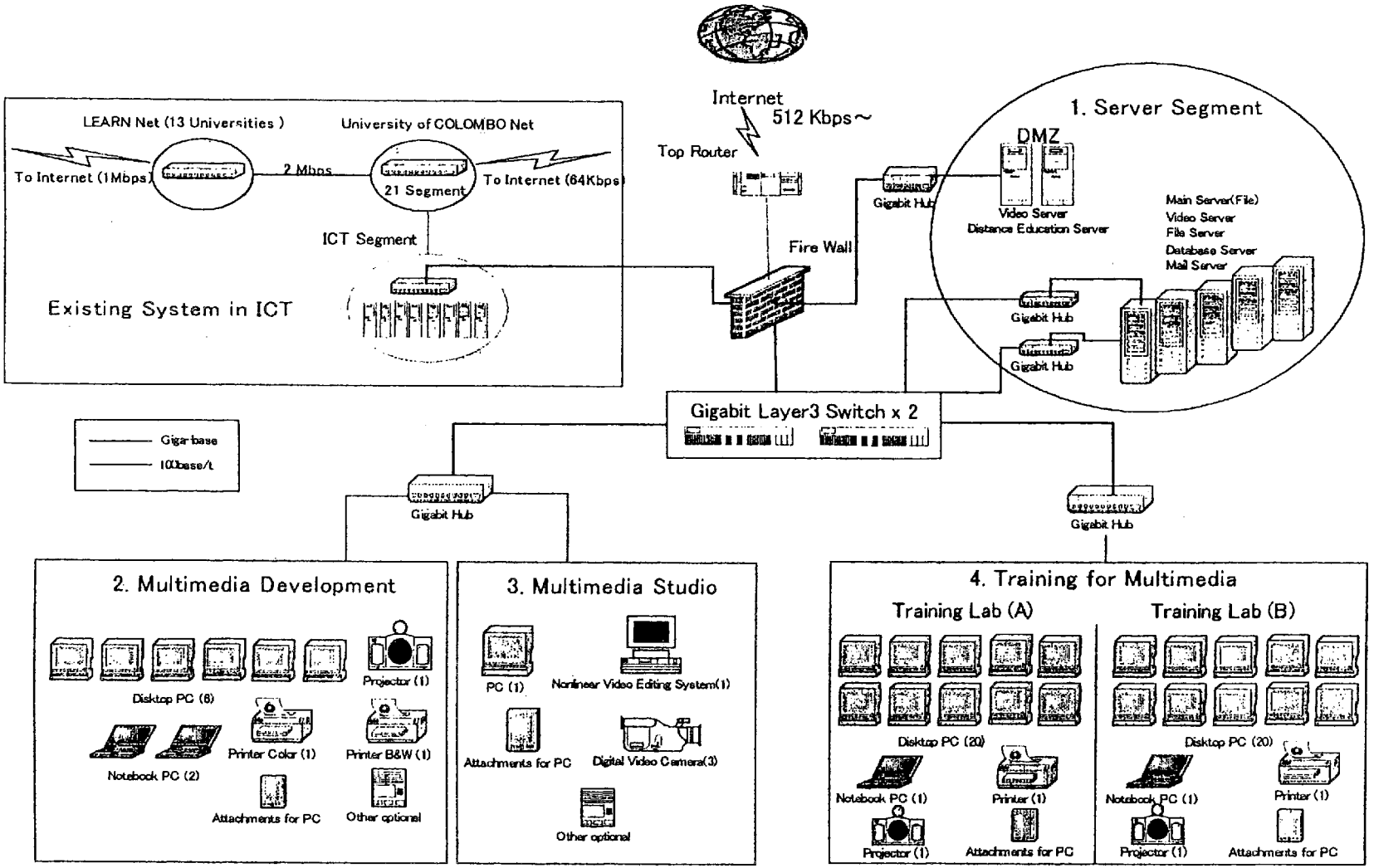
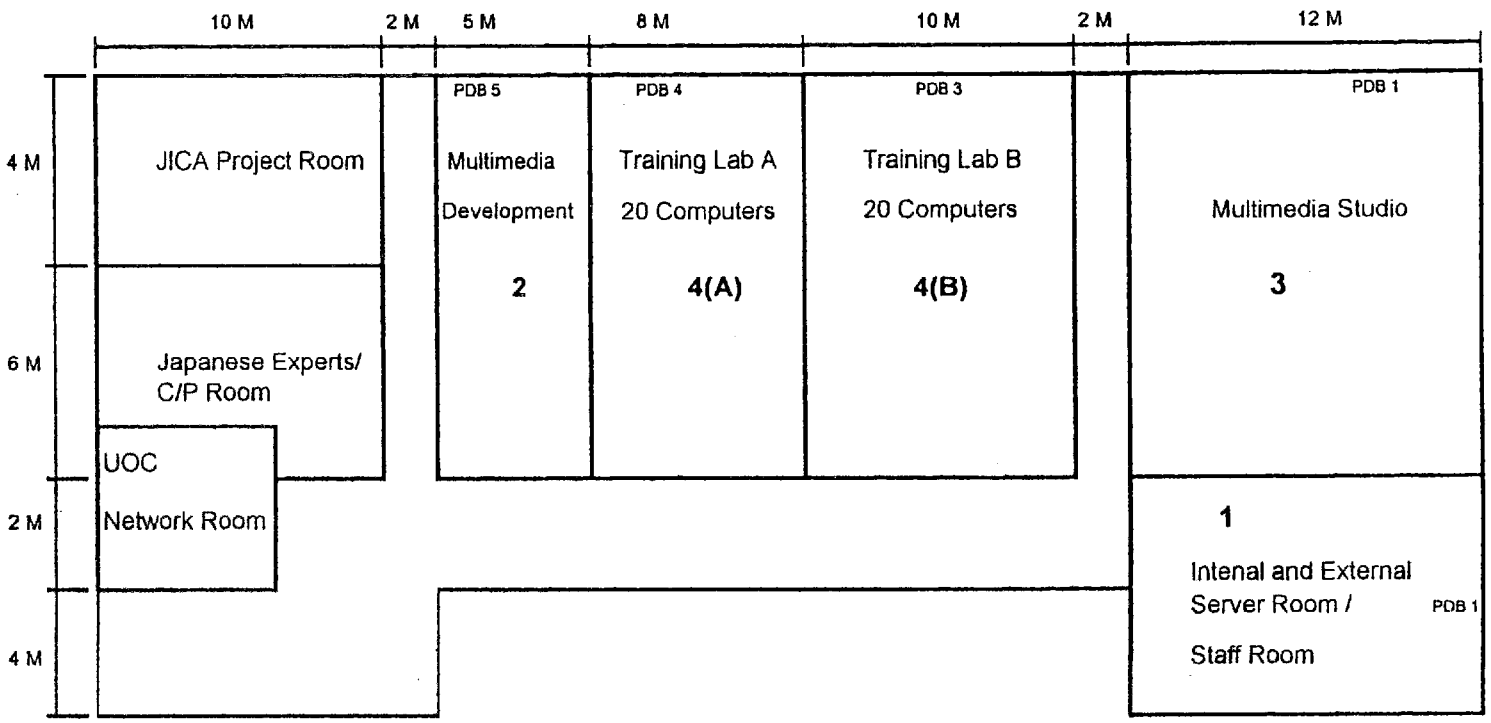
Annex7-1 Layout for the Machinery and equipment



Annex 7-2 Layout plan for the Machinery and equipment



1st Floor - ICT, University of Colombo

Annex 8 Tentative List of Members of Joint Coordinating Committee (JCC)

1. Function

The Joint Coordinating will be held at least twice a year and whenever the necessity arises

Its functions are as follows:

(1) To agree on the Annual Plan of Operation (APO) and the Annual Tentative Schedule for Implementation (ATSI) of the Project in line with Plan of Operation (PO) and Tentative Schedule of Implementation (TSI) formulated under the frame work of the Record of Discussions (RD);

(2) To Coordinate necessary actions to be taken by both sides;

(3) To review the overall progress of the achievement of the PO;

(4) To exchange views on major issues arising from or in connection with the PO;

(5) To hear the Opinions from the forum, and reflect the opinions in the activity of the project, if necessary.

2. Composition

(1) Chairperson

The Ministry in charge of the subject of Higher Education (Secretary or Additional Secretary)

(2) Committee Members

Sri Lankan Side

- External Resources Department (Director General or nominee)
- Department National Planning (Director General or nominee)
- University Grants Commission (Chairman or Deputy Chairman)
- University of Colombo (A member of the Council of the University of Colombo who is also a member of the Board of Management of ICT)
- CINTEC (Chairman or nominee who is the member of the Council of CINTEC)
- ICT Project Director and Project Coordinating Manager
- Chairperson of the Industry – University Forum

Japanese Side

- Chief Advisor
- Technical Coordinator
- Japanese Experts designated by the Chief Advisor
- Representative(s) from JICA Sri Lanka Office
- Other personal concerned to be decided and dispatch by JICA, if necessary

Note:

Official(s) of Japanese Embassy in Sri Lanka may attend Committee as observer(s).

ICT.

Annex 9 **Tentative List of members of the Industry - University Forum**

1. Function

The Forum will be held at least once a quarter and whenever the necessity arises.

Its functions are as follows:

(1) To exchange of the opinions of the Universities and Industries

(2) To hear the needs of the Universities and Industries

2. Composition

(1) Chairperson

To be elected by industry representatives from among themselves

(2) Forum Members

Sri Lankan Side

- Secretary to the Ministry in charge of the subject of Higher Education or nominee
- Chairman, University Grants Commission or nominee
- Nominee of Vice Chancellor of each of University of Colombo, University of Moratuwa, University of Peradeniya, University of Kelaniya and University of Ruhuna. (Such nominee should represent Human Recourse Development activities in IT of the respective University).
- Nominee of Chairman CINTEC
- Nominee of Secretary to the Ministry in charge of subject of industries (currently of MID)
- Nominee of Secretary to the Ministry in charge of subject of Information Technology
- Nominee of Secretary to the Ministry in charge of subject of Telecommunications
- Nominee of Secretary to the Ministry in charge of subject of Science and Technology
- Nominee of Federation of the IT Industry, Sri Lanka (FITIS)
- Nominee of Association of Computer Training Organizations (ACTOS)
- Nominee of Sri Lanka Association of Software Industry (SLASI)
- Nominee of Software Exporters' Association (SEA)
- Nominee of Licensed Internet Service Providers Association (LISPA)
- Nominee of Ceylon Chamber of Commerce
- ICT Project Director and Project Coordinating Manager
- Nominee of the Standing Committee on IT who would represent universities other than those represented above.
- Nominee other sector of the industries concerned to be decided by the chairperson of the University-Industry Forum id necessary.

Japanese Side

- Japanese Experts for the Project
- Representative from JICA Sri Lanka Office

K.T.

Annex 10 List of Attendance

1 Sri Lankan Side

(1) Ministry of Education & Higher Education

A.M. Chandrapala	Additional Secretary

(2) Ministry of Finance & Planning

Sujatha Cooray	Director, Department of External Resources

(3) University Grants Commision

Prof. B.R.R.N Mendis	Chairman

(4) Institute of Computer Technology, University of Colombo

Prof. V.K. Samaranayake	Director
ST Nandasara	Lecturer

(5) University of Colombo

Savitri Goonesekere	Vice-Chancellor

(6) University of Peradeniya

Prof. Kapila Goonesekera	Vice-Chancellor
Dr. Kithsiri M Liyanage	Director, the Computing Center

(7) Department of Computer Science & Eng., University of Moratuwa

Dr. Nalin Wickremaarachchi	Head of Computer Science & Eng.,
Dr. Gihan V. Dias	Technical Manager, LEARN

2 Japanese side

(1) Second Preparatory Study Team

Mr. Koichi Takizawa	Team Leader
Mr. Hiroomi Homma	IT Education Planning / IT Utilized Curriculum
Mr. Tomoyasu Maekawa	Multimedia Technology
Mr. Hideharu Tachibana	Cooperation Planning
Mr. Nobuhisa Iwase	Human Resource Development
Mr. Futoshi Horikoshi	Equipment Planning

(2) Embassy of Japan

Mr. Katsuyo Eguchi	Second Secretary

(3) JICA Sri Lankan Office

Mr. Seiji Kaiho	Resident Representative
Mr. Yasujiro Suzuki	Deputy Resident Representative
Mr. Hiroyuki Tanaka	Asst. Resident Representative

付属資料３．

実施協議討議議事録（R／D）／ミニッツ

目　　次

実施協議討議議事録(R／D)／ミニッツ

１．実施協議

これまでの短期調査の結果から、プロジェクトの内容及び実施体制について、おおむね内容が固まっていたことから、本邦から調査団は派遣せず、JICAスリランカ事務所長がR／D及びミニッツの署名・交換を実施した。

２．調査・協議結果概要

（1）討議議事録(R／D)

標記プロジェクトを2002年６月１日から３年間にわたって実施することでスリランカ側実施機関と合意した。プロジェクト実施にあたり、日本側、スリランカ側双方がとるべき措置、プロジェクト実施体制、日本側投入の概要などをR／Dに記載して、スリランカ側関係機関との間で署名・交換を行った。

（2）協議結果概要

1） プロジェクト・ドキュメント

2001年７月及び11月に実施した短期調査の結果を基に、プロジェクト実施の背景、対象セクターの現状と問題点、プロジェクト戦略、プロジェクトの基本計画、協力実施の妥当性などをプロジェクト・ドキュメントに記載し、スリランカ側と協議・修正のうえ、ミニッツに添付した(Annex１参照)。

2） 日本側投入

a） 専門家

長期専門家は、チーフアドバイザー、テクニカルコーディネーターの２名をコロンボに派遣することとした。短期専門家については、2002年度は以下の分野について対応する予定である。

① マルチメディア(Audio/Visual Production)：2002年７月から１か月間程度
② マルチメディア(Web Casting Technology)：2003年１月から１か月間程度
③ マルチメディア(Multimedia Application)：2002年８月から１か月間程度
④ マルチメディア(Instructional Media Design)：2002年９月から１か月間程度
⑤ データベースマネージメント：2002年11月から２か月間程度
⑥ セキュリティーマネージメント：2003年１月から２か月間程度
⑦ インターネット技術：2002年９月から１か月間程度
⑧ R&Dマネージメント／セミナー講師：必要に応じて派遣

なお、民間人材を活用するために詳細の技術移転項目及び担当分野を整理した結果、派遣する専門家の分野と人数は以下のとおり変更となった。

① Daisy(セミナー・ワークショップ)
② R&Dマネージメント／セミナー(１)
③ R&Dマネージメント／セミナー(２)
④ 教育用メディアデザイン(WBT教材作成A)
⑤ 情報システムの設計と利用
⑥ マルチメディア・利用技法
⑦ データベースマネージメント(DB、正規化)
⑧ セキュリティーマネージメント(サーバーレベル、インターネット)
⑨ Webキャスティング技術

b) C／Pの本邦研修

スリランカ側と協議の結果、2002年度は計３名を以下の分野について受け入れることとした。

① プロジェクトマネージメント／WBT技術：１名
② WBT技術(デジタルビデオ作制)：１名
③ WBT技術(マルチメディア教材作成)：１名

c) 機材供与

プロジェクトに必要な供与機材をリストアップし、供与機材リストとしてR／Dに添付した。基本的にプロジェクトに必要な供与機材は、2001年度中に現地調達することとした。また、R&D用の機材については、R&Dのテーマが確定次第、可能な限り現地調達することとした(2002年度予算にて調達)。

3) スリランカ側投入

a) C／P

「プロジェクトチーム」には、ICTから合計24名のC／Pが配置される予定である(プロジェクト管理者を除いた人数)。このうち６名が、プロジェクト専属のC／P(直接C／P)となり、各専門家からの技術移転及び教材開発などを集中的に担当する。残りの18名は通常業務をもっているC／Pであり、基本的には直接C／Pから技術移転を受けることとした(必要に応じて専門家からの技術移転を受ける)。また、このほかにR&Dに関する活動については、各テーマごとに担当者を決めることとした。

b) プロジェクト運営予算

ICTはプロジェクト向けの2002年度予算として3,500万ルピーを用意しており、ICTの改修費、立ち上げに係る諸費用、運営コスト、スタッフの人件費などに充てる予定であ

る。また、翌年度以降もプロジェクト用の予算として、1,100万ルピー程度の予算を確保している。

c） 建物・設備

ICTの改修にあたり、入札の準備を行っている。現在の予定では2002年５月末までに改修工事を終えるとしている。

4） JCC及び産業－大学フォーラム（Industry-University Forum）

プロジェクトに対して受益者や外部関係者からの意見・アドバイスを聞く場として、JCCを設置する。これに加えて、JCCの下部組織として産業－大学フォーラムを設置することとした。同フォーラムは産業・大学・政府機関の重要な関係者間でWBTとプロジェクトに関連する情報を共有し、意見交換を図るために組織されるものである。

5） モニタリング・評価

プロジェクト開始後６か月ごとに定期モニタリングを、中間期及び終了時にはプロジェクトの評価を、それぞれ日本側とスリランカ側が合同で行うことを改めて確認し、ミニッツに記載した。定期モニタリングについては、2002年12月より６か月おきに実施することとなった。

3．討議議事録(R／D)

RECORD OF DISCUSSIONS BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA ON JAPANESE TECHNICAL COOPERATION ON PROJECT FOR HUMAN RESOURCE DEVELOPMENT IN INFORMATION TECHNOLOGY THROUGH CAPACITY BUILDING OF THE INSTITUTE OF COMPUTER TECHNOLOGY, UNIVERSITY OF COLOMBO

With regard to the Minutes of Understanding of the Preparatory Study signed on July 20, 2001 and the Second Preparatory Study signed on November 27, 2001, the Japan International Cooperation Agency (hereinafter referred to as "JICA") had a series of discussions through the Resident Representative of JICA in the Democratic Socialist Republic of Sri Lanka with the Sri Lankan authorities concerned on measures to be taken by both Governments for successful implementation of the Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo.

As a result of the discussions, JICA and the Sri Lankan authorities concerned agreed to recommend to their respective Governments the maters referred to in the document attached hereto.

Colombo, the Democratic Socialist Republic of Sri Lanka, 25th January, 2002

Mr. Seiji KAIHO
Resident Representative
JICA Sri Lanka Office

Mr. Saman Ediriweera
Secretary
Ministry of Tertiary Education and Training
Democratic Socialist Republic of Sri Lanka

Prof. T. Hettiarachchy
Actg. Vice Chancellor
University of Colombo
Democratic Socialist Republic of Sri Lanka

Witness

Ms. Sujatha Cooray
Director
Department of External Resources
Democratic Socialist Republic of Sri Lanka

Prof. B.R.R.N Mendis
Chairman
University Grants Commission
Democratic Socialist Republic of Sri Lanka

Prof. V.K. Samaranayake
Director
Institute of Computer Technology
University of Colombo

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of the Democratic Socialist Republic of Sri Lanka will implement the Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo (hereinafter referred to as "the Project") in cooperation with the Government of Japan.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

In accordance with the laws and regulations in force in Japan, the Government of Japan will take, at its own expense, the following measures through JICA according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

1. DISPATCH OF JAPANESE EXPERTS
   The Government of Japan will provide the services of the Japanese experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT
   The Government of Japan will provide such machinery and equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in AnnexⅢ. The Equipment will become the property of the Government of the Democratic Socialist Republic of Sri Lanka upon being delivered C.I.F. (cost, insurance and freight) to the Sri Lankan authorities concerned at the ports and/or airports of disembarkation.

3. TRAINING OF SRI LANKAN PERSONNEL IN JAPAN
   The Government of Japan will receive the Sri Lankan personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

1. The Government of the Democratic Socialist Republic of Sri Lanka will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.

2. The Government of the Democratic Socialist Republic of Sri Lanka will ensure that the technologies and knowledge acquired by the Sri Lankan nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Democratic Socialist Republic of Sri Lanka.

3. The Government of the Democratic Socialist Republic of the Sri Lanka will grant in the Democratic Socialist Republic of the Sri Lanka privileges, exemption and benefits to the Japanese experts referred to in Ⅱ-1 above and their families no less favorable than those accorded to experts of third countries working in the Democratic Socialist Republic of Sri Lanka under the Colombo Plan Technical Cooperation Scheme.

4. The Government of the Democratic Socialist Republic of the Sri Lanka will ensure that the Equipment referred to in Ⅱ-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in Annex Ⅱ.

5. The Government of the Democratic Socialist Republic of the Sri Lanka will take necessary measure to ensure that the knowledge and experience acquired by the Sri Lanka personnel from technical training in Japan will be utilized effectively in the implementation of the Project.

6. In accordance with the laws and regulations in force in the Democratic Socialist Republic of the Sri Lanka, the Government of the Democratic Socialist Republic of the Sri Lanka will take necessary measure to provide at its own expense:

(1) Services of the Sri Lnakan counterpart personnel and administrative personnel as listed in AnnexⅣ;

(2) Land, building and facilities as listed in AnnexⅤ;

(3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under Ⅱ-2 above;

(4) Means of transport and travel allowance for the Japanese experts for official travel within the Democratic Socialist Republic of the Sri Lanka; and

(5) Suitably furnished accommodation for the Japanese experts and their families.

7. In accordance with the laws and regulations in force in the Democratic Socialist Republic of the Sri Lanka, the Government of the Democratic Socialist Republic of the Sri Lanka will take necessary measures to meet:

(1) Expenses necessary for the transportation within the Democratic Socialist Republic of the Sri Lanka of the Equipment referred to in Ⅱ-2 above as well as for the installation, operation and maintenance therefor;

(2) Customs duties, internal taxes (including value added tax) and any other charges, imposed in the Democratic Socialist Republic of the Sri Lanka on the Equipment referred to in Ⅱ-2 above; and

(3) Running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. The Secretary of Ministry of Tertiary Education & Training will bear overall responsibility for the administration and implementation of the Project.

2. Director of the Institute of Computer Technology, University of Colombo (hereinafter referred to as "ICT"), as a Project Director, will be responsible for total management of the Project including financial and technical aspects.

3. Lecturer of the ICT, as the Project Coordinating Manager, will be responsible for assistant of management and technical matters of the Project.

4. The Japanese Team leader will provide necessary recommendations and advice to the Project Director and the Project Coordinating Manager, who will be assigned among the ICT staff to assist the Project Director, on any matters pertaining to the implementation of the Project.

5. The Japanese experts will give necessary technical guidance and advice to the Sri Lankan counterpart personnel on technical matters pertaining to the implementation of the Project.

6. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are

described in Annex VI. In addition the Industry-University Forum will be established as an attached organization to the JCC to listen to the voice of the beneficiaries including industries and universities as shown in Annex VII.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by the two Governments through JICA and the Sri Lankan authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

The Government of Democratic Socialist Republic of the Sri Lanka undertakes to bear claims, if any arises, against the Japanese experts engaged in the technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Democratic Socialist Republic of Sri Lanka expect for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on an major issues arising from, or in connection with this Attached Document.

VIII. MESURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of Democratic Socialist Republic of the Sri Lanka, the Government of Democratic Socialist Republic of the Sri Lanka will take appropriate measures to make the Project widely known to the people of Democratic Socialist Republic of the Sri Lanka.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be three (3) years from June 1, 2002.

ANNEX I	MASTER PLAN
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	LIST OF SRI LANKAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF LAND, BUILDINGS AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE
ANNEX VII	THE INDUSTRY – UNIVERSITY FORUM

Annex I MASTER PLAN

1 Overall Goal

Both quality and quantity of IT related human resources in Sri Lankan industries are improved.

2 Project Purpose

The ICT increases its capacity in conducting IT trainings that match with the needs of Sri Lankan industries in a more effective and efficient manner for IT related staff in universities, IT training institutes and industries.

3 Outputs and Activities of the Project

(1) Outputs

1) Organization/functions of ICT are strengthened

2) Counterpart personnel acquire necessary IT skills and technologies for the implementation of WBT

3) ICT provides IT training courses that meet the needs of universities, IT training institutes and industries

4) R&D capabilities relating to WBT are strengthened in ICT

(2) Activities

1-1) Establishment of Project Operation Unit for implementation and administration

1-2) Collection and dissemination of Project-related information

1-3) Strengthening cooperation / coordination with other IT related institutions / organizations

2-1) Further development of multimedia application technology

2-2) Further development of computer network technology

2-3) Further development of information system management / administration technology

2-4) Further development of database system management / administration technology

2-5) Trainers' training of WBT content developers/IT trainers

3-1) Clarification of needs for training courses and review of the current courses

3-2) Preparation of curricula, course plans and teaching materials

3-3) Development of WBT methodologies

3-4) Production of teaching (WBT) materials

3-5) Training of WBT content developers/IT trainers

3-6) Implementation of training courses at ICT

4-1) Further development of R&D methodologies

4-2) Implementation of R&D

Annex II LIST OF JAPANESE EXPERTS

1 Long-term Experts

(1) Chief advisor	1
(2) Technical coordinator	1

2 Short-term Experts

Short-term experts may be dispatched, for specific fields of technology transfer such as multimedia application technology, computer network technology, information system management / administration technology, database system management / administration technology, R&D methodologies, maintenance and operation of machinery and equipment, and for the training of technical personnel in relation to the scope of the project when necessity arises, for the smooth implementation of the Project.

Annex III LIST OF MACHINERY AND EQUIPMENT

1 Machinery, equipment, tools and materials for Web Based Training

2 Other machinery, equipment and materials regarded by both sides as necessary for effective implementation of the Project

Annex IV LIST OF SRI LANKAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1 Counterpart personnel

(1) Administrative counterpart personnel
(2) Technical counterpart personnel

2 Administrative personnel

3 Supporting staff

4 Any other necessary personnel for the smooth implementation of the Project

Annex V LIST OF LAND, BUILDINGS AND FACILITIES

1 Office space and necessary facilities for the Japanese Experts

2 Office space and necessary facilities for the Sri Lankan counterpart personnel

3 Lecture rooms and meeting rooms necessary for the transfer of technology

4 Buildings, facilities and space necessary for the installation and operation of the machinery, equipment and materials to be provided by the Government of Japan

5 Other facilities considered by both sides to be necessary

Annex VI JOINT COORDINATING COMMITTEE

1 Functions

The Joint Coordinating Committee will be held at least twice a year and whenever necessity arises.

Its functions are as follows:

(1) To settle on the Annual Cooperation Plan of the Project in line with the Project Design Matrix (PDM), the Plan of Operations (PO) formulated under the framework of the Record of Discussions;
(2) To coordinate necessary actions to be taken by both sides;
(3) To review the overall progress of the PDM and PO, and,
(4) To exchange views on major issues arising from or in connection with the PDM and PO.
(5) To consider the recommendations of the Industry - University Forum in order to maximize the benefits from the Project

2 Composition

(1) Chairperson

The Ministry in charge of the subject of Higher Education (Secretary or nominee)

(2) Committee Members

(Sri Lankan Side)

a Department of External Resources, (Director General or nominee)
b Department National Planning (Director General or nominee)
c University Grants Commission (Chairman or Deputy Chairman)
d University of Colombo (A member of the Council of the University of Colombo who is also a member of the Board of Management of ICT)
e Ministry in charge of the subject of Information Technology (Secretary or nominee)
f Institute of Computer Technology (Project Director and Project Coordinating Manager)
g Chairperson of the Industry – University Forum

(Japanese Side)

a Chief Advisor
b Technical Coordinator
c Japanese Experts designated by the Chief Advisor
d Representative(s) from JICA Sri Lanka Office
e Other personnel concerned to be decided and dispatch by JICA, if necessary

Note:

1 Official(s) of the Embassy of Japan in Sri Lanka may attend the Committee as observer(s).

Annex VII THE INDUSTRY – UNIVERSITY FORUM

1 Function

The Forum will be held at least once a quarter and whenever the necessity arises.
Its functions are as follows:
(1)To discuss and assess the needs of Industry and University
(2)To facilitate a dialogue between JCC and beneficiaries of the Project

2 Composition

(1) Chairperson

To be elected by industry representatives from among themselves

(2) Forum Members

(Sri Lankan Side)

a Secretary to the Ministry in charge of the subject of Higher Education or nominee
b Chairman, University Grants Commission or nominee
c Nominee of Vice Chancellor of each of University of Colombo, University of Moratuwa, University of Peradeniya, University of Kelaniya and University of Ruhuna, (Such nominee should represent Human Recourse Development activities in IT of the respective University).
d Nominee of Secretary to the Ministry in charge of subject of Industries (currently of MID)
e Nominee of Secretary to the Ministry in charge of subject of Information Technology
f Nominee of Federation of the IT Industry, Sri Lanka (FITIS)
g Nominee of Association of Computer Training Organizations (ACTOS)
h Nominee of Sri Lanka Association of Software Industry (SLASI)
i Nominee of Software Exporters' Association (SEA)
j Nominee of Licensed Internet Service Providers Association (LISPA)
k Nominee of Ceylon Chamber of Commerce
l Nominee of the Board of Investment of Sri Lanka
m Project Director and Project Coordinating Manager of the Institute of Computer Technology
n Nominee of the Standing Committee on IT of the University Grants Commission who would represent universities other than those represented above.
o Nominee from other sectors of the industries concerned to be decided by the chairperson of the University-Industry Forum if necessary.

(Japanese Side)

a Japanese Experts for the Project
b Representative from JICA Sri Lanka Office

4．ミニッツ及びプロジェクト・ドキュメント(英文)

THE MINUTES OF MEETING BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA ON THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT FOR HUMAN RESOURCE DEVELOPMENT IN INFORMATION TECHNOLOGY THROUGH CAPACITY BUILDING OF THE INSTITUTE OF COMPUTER TECHNOLOGY, UNIVERSISTY OF COLOMBO

Japan International Cooperation Agency (hereinafter referred to as "JICA") and Ministry of Tertiary Education & Training signed the Record of Discussions (hereinafter referred to as "R/D") on the Japanese Technical Cooperation for the Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo (hereinafter referred to as "the Project").

The attached document hereto is intended to specify the contents of the Project agreed between both sides in regard to the provisions stipulated in the R/D

Colombo, the Democratic Socialist Republic of Sri Lanka, 25th January, 2001

Mr. Seiji KAIHO
Resident Representative
JICA Sri Lanka Office

Mr. Saman Ediriweera
Secretary
Ministry of Tertiary Education & Training
Democratic Socialist Republic of Sri Lanka

Prof. V.K. Samaranayake
Director
Institute of Computer Technology
University of Colombo

Ms. Sujatha Cooray
Director
Department of External Resources
Democratic Socialist Republic of Sri Lanka

Attached Document

I General Items

1 Placement of the Previous Minutes of Meeting

Both sides agreed that the understanding of the items other than those mentioned in this Minutes of Meeting remains unchanged from the one mutually confirmed in the Minutes of Meeting signed on July 20, 2001, and November 27, 2001 (hereinafter referred to as "the previous M/Ms").

2 Monitoring and Evaluation

Reconfirming the importance of monitoring and evaluation of the progress and achievement of the Project, both sides agreed on the following.

(1) Monitoring

a Based on the Project Design matrix (hereinafter referred to as "PDM"), discussed in Article II -5(1) below, as well as the five basic evaluation components, regular monitoring on the Project's achievement is to be implemented primarily by the counterpart personnel (hereinafter referred to as "C/P") and the experts.

b Within the first six (6) months after the commencement of the project, a monitoring system should be established and that every six (6) months from thereof, monitoring should be done and the result should be distributed to the organizations and/or personnel concerned with the Project.

(2) Evaluation

a The final evaluation of the Project will be conducted jointly by both sides through JICA and the Institute of Computer Technology, University of Colombo (hereinafter referred to as "ICT") approximately six (6) months before the termination of the cooperation period in order to examine the level of achievement.

b Other evaluations may be conducted when necessary during and after the cooperation period.

c Members of the Sri Lankan evaluation team should include those who are not directly involved in the Project management to secure the fairness of the evaluation, while JICA will hire a consultant exclusively for the Japanese evaluation team for the same reason.

d The said consultant will be dispatched beforehand to the Project and gather necessary information and data to facilitate the evaluation.

e All evaluation activities will be implemented according to the PDM and the five (5) basic evaluation components will be used as the viewpoints for the evaluation.

II Specific Items regarding the Project

1 Project Document

Both sides confirmed and agreed on the Project Document as in Annex 1. Specific items regarding the Project, i.e., background information, present condition of the target sector, project strategy, project design (master plan) and project justification, are stipulated in the Project Document.

Items which are clearly mentioned neither in the Project Document nor the previous M/Ms or the R/D, are specified below.

2 Title of the Project

Both sides reconfirmed that the title of the Project is "The Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo".

3 Duration of the Japanese Technical Cooperation for the Project

Both sides reconfirmed that the duration of the technical cooperation for the Project by the Government of Japan would be three (3) years from 1 June 2002, the departure date for Japanese long-term experts.

JICA explained that from the first year through the second year of the cooperation period, the emphasis of the technical cooperation would be on upgrading the C/P skills and the smooth execution of the training courses held at the ICT. The third year is designed to be a transition stage, where the operation of training will be gradually shifted into the hands of C/P, while Japanese experts are to take only advisory roles.

4 Authorities concerned of the Project

Ministry of Tertiary Education & Training (hereinafter referred to as "MTET") will be an overall responsible authority for the Project.

The Project will be implemented by the ICT.

The present organization chart of MTET and the ICT are shown in Annex 2.

The budget of the ICT is as shown in Annex 3.

5 Charts for Project Planning and Management

Both sides reconfirmed and agreed on the following charts to be used for the purpose of project planning and management:

(1) Project Design Matrix (PDM)

Both sides confirmed that the PDM attached as Annex 1 to the M/M signed on November 27, 2001, would be considered final.

(2) Plan of Operations (PO)

Both sides confirmed that the Plan of Operations (hereinafter referred to as "PO"), attached as Annex 2 to the M/M signed on November 27, 2001, would be considered final.

(3) Tentative Schedule of Implementation (TSI)

Both sides confirmed that the Tentative Schedule of Implementation (hereinafter referred to as "TSI"), attached as Annex 3 to the M/M signed on November 27, 2001, would be considered final.

(4) Annual Tentative Schedule of Implementation (ATSI)

Both sides agreed that the annual tentative schedule of implementation (hereinafter referred to as "ATSI") for the first year is given as shown in Annex4.

Both sides confirmed that the contents and schedule of the above-mentioned charts were subject to change with the progress of the Project.

6 Measures to be Taken by the Japanese Side

(1) Dispatch of Japanese Experts

Both sides confirmed that the following Japanese experts would be dispatched.

a Long-term Experts

(a) Chief Advisor

(b) Technical Coordinator

b Short-term Experts

Both sides confirmed that short-term experts in the specific fields of technology transfer might be dispatched, if necessary.

In this relation, specific fields of short-term experts for the first year are listed as shown in Annex 5. Specific fields of short-term experts for the second and third year will be considered by both sides.

(2) Training of the Sri Lankan Counterpart Personnel in Japan

Both sides confirmed that a certain number of the Sri Lankan C/P would be accepted for training in Japan during the cooperation period according to the following program:

a Number of participants

A certain number (0-3 persons) yearly (subject to change by budgetary appropriation of JICA)

b Term and timing

The term will be discussed further between Japanese experts and the Sri Lankan side, however at most three (3) months will be appropriate, taking into consideration the budgetary appropriation of JICA.

The timing of the training will be discussed by both sides, however, some of the training may be implemented before the dispatch of experts in view of the efficiency of the technology transfer.

c Fields

Details of training contents will be discussed further by both sides.

d Methodology

The main aim of trainings of the C/P in Japan is to complement the technology transfer by the experts in ICT, and the examples of which are described as follows:

(a) To visit the public institution and other organizations which play the same role that the ICT is expected to play.

(3) Provision of Machinery and Equipment

Both sides confirmed that the tentative list of machinery and equipment to be provided by Japanese side for the Project, attached as Annex 6 to the M/M signed on November 27, 2001, would be considered final.

7 Measures to be taken by the Sri Lankan Side

(1) Allocation of C/P and administrative personnel

The latest list of ICT staff for the Project is attached hereto as Annex 6.

(2) Machinery and Equipment

Both sides confirmed that the Sri Lankan side would make necessary arrangements for the system configuration plan, dedicate internet line, securing sufficient rooms including multi-media studio with separate narration booth, equipped with necessary furniture, electricity infrastructure, air conditioners, telephone lines and so forth before the installment of machinery and equipment which would be provided by Japanese side for the Project.

(3) Sustainability of the Project

The Sri Lankan side will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of the Japanese technical cooperation, through the full and active involvement in the Project by all related authorities, beneficiary groups so that the technologies and knowledge acquired by the C/P through the Project will ultimately contribute to the economic and social development of the Democratic Socialist Republic of Sri Lanka.

(4) Public Relations (Publicity)

Both sides reconfirmed that the Project would make best use of all communication tools as follows for the effective publicity and transparency of the Project.

a Material for Public Relations

A leaflet for the Project should be prepared through the collaboration of Japanese experts and the C/P and thus, any person/organization concerned with the Project can get

a certain image of the Project.

In addition, Internet use should be positively considered as means of provision of the Project information.

b Opening Ceremony (Inauguration)

When the main equipment are delivered, installed and possibly operated by the C/P, opening ceremony should be held as a one of Commemoration event of the 50th anniversary for establishment diplomatic relation between Japan and Sri Lanka, which should be attended by students, officials of governmental agencies and other concerned parties as well as mass-media.

Both sides tentatively set timing of the opening ceremony in October 2002.

8 Items to be followed up by Both Sides

In order to commence the Project smoothly, both sides agreed that the following points should be followed up by both sides.

(1) Japanese Side

-Recruiting qualified experts
-Preparing training programs
-Reconfirming specifications and procuring necessary machinery and equipment

(2) Sri Lankan Side

-Submitting official request forms to the Government of Japan, including A1 (experts), A2/A3 (training), and A4 (equipment)
-Recruiting necessary staff for the Project
-Reforming of the ICT building for the Project
-Organizing the Joint Coordinate Committee (JCC) and the Industry-University Forum

9 Others

Both sides confirmed that the common language used in the Project activities would be English in principle.

III List of Attendants

A list of attendants to the discussions is shown in Annex 7.

List of Annexes

1 Project Document
2 The Present Organization Chart of MTET and ICT
3 The Budget of the ICT
4 Annual Tentative Seclude of Implementation
5 List of Short-term Experts for the first year
6 List of the ICT staff for the Project
7 List of Attendants

Annex 1

The Democratic Socialist Republic of Sri Lanka

The Project for Human Resource Development in Information Technology through Capacity Building of the Institute of Computer Technology, University of Colombo

Project Document

1. Preface

In August 2000, the Government of Sri Lanka requested the Government of Japan to conduct a technical cooperation on the Multimedia Technology Training and Development Center Project. At the Institute of Computer Technology (ICT) of the University of Colombo, where the proposed project should take place, project-type technical cooperation (Sri Lanka Computer Center Project) was implemented for the three years from April 1987, with the objective to train computer engineers (analyst programmers) able to develop software using general-purpose computers and to play a leading role in the sector. After the successful completion of the Sri Lanka Computer Center Project, a follow-up cooperation program and an after care program were also implemented in the ICT, and currently training programs for third countries are being carried out.

After the IT Charter was adopted in the Kyushu-Okinawa Summit in July 2000, JICA dispatched a Project Finding Team to Sri Lanka in March 2001 in the field the information technology (IT), in consideration of the importance of offering cooperation in the IT sector.

Given the results of the past technical cooperation and the findings of recent studies, the future direction of technical cooperation to Sri Lanka by the Japanese government has been suggested in the way that projects to improve an institutional system for capacity building in the IT sector, and to increase a supply of IT human resources both in industries and government agencies, especially to the growing IT software and service industry, be one of the priority area.

2. Background information of the project implementation

2-1. Social and economic situation of the country

The scale of the traditional agriculture sector has contracted and the importance of the manufacturing and the service industries has increased in the Sri Lankan economy. However, though various kinds of sectors are growing in the manufacturing industry, the economy is still largely dependent on the garment industry, which exports more than 50% of the total export value of the country.

Table 2-1. Major economic indicators of Sri Lanka

	1995	1996	1997	1998	1999
Real growth rate of GDP	5.53	3.76	6.44	4.75	4.30
Nominal GDP (RS. Mn.)	662,384	771,414	891,067	1,011,349	1,100,825
Nominal growth rate	14.4	16.5	15.5	13.5	8.8
Nominal per capita GDP (Rs. Mn.)	36,571	42,119	48,031	53,870	57,807
Nominal per capita GDP ($)	714	762	814	834	821
Population (thousand people)	18,112	18,315	18,552	18,774	19,043
Exchange rate (rupees/US$)	51.25	55.27	59.00	64.59	70.39

Source: Central Bank of Sri Lanka

Table 2-2. Gross National Product at Current Factor Cost Prices

Rs. Million

Sector	1996	1997(a)	1998(a)	1999(a)
1. Agriculture, Forestry and Fishing	156,108	175,774	192,665	205,599
1.1 Agriculture	122,594	138,999	153,335	163,481
Tea	10,332	12,685	14,448	12,295
Rubber	4,011	3,132	2,462	2,253
Coconut	12,838	14,960	15,573	17,675
Paddy	19,892	24,469	26,842	30,197
Other	75,521	83,753	94,010	101,061
1.2 Forestry	14,751	15,362	15,669	16,280
1.3 Fishing	18,763	21,413	23,661	25,838
2. Mining and Quarrying	13,927	16,587	17,433	18,322
3. Manufacturing				
3.1 Processing of Tea, Rubber & Coconut Kernel Products	112,724 16,203	131,876 19,476	151,007 23,176	163,103 24,821
3.2 Factory Industry	87,771	102,253	116,568	125,893
3.3 Small Industry	8,750	10,147	11,263	12,389
4. Construction	48,234	56,434	69,301	75,538
5. Electricity, Gas, Water and Sanitary Services	9,171	11,280	13,660	14,425
6. Transport, Storage and Communication	73,784	86,327	101,620	113,814
7. Wholesale and Retail Trade	155,316	177,123	196,262	211,376
7.1 Imports	64,629	74,129	81,468	88,882
7.2 Exports	16,365	19,753	22,064	23,366
7.3 Domestic	74,322	83,241	92,730	99,128
8. Banking, Insurance and Real Estate	49,675	59,610	69,267	80,696
9. Ownership of Dwellings	14,232	15,769	17,346	18,387
10. Public Administration and Defense	35,215	40,990	48,040	52,412
11. Services (n.e.s.)	27,548	31,928	36,238	41,058
12. G.D.P.	695,934	803,698	912,839	994,730
13. Net Factor Income from Abroad	-11,258	-9,409	-11,556	-17,813
14. G.N.P.	684,676	794,289	901,283	976,917

(a) Provisional

Source: Central Bank of Sri Lanka

The country's basic infrastructure required for economic development is still insufficient. Due to the civil war and shrinkage in government spending, development of various kinds of economic infrastructure including roads and railways has been delayed. In the meantime, the Government plans to develop expressways with joint financing by the Asian Development Bank (ADB) and yen credit. Shortage in social infrastructure, including water supply, exists in rural areas.

Although power supply is recognized as crucial infrastructure for the development of IT-related sectors, power failure occurs for around one hour every day in many places, which lets many IT-related enterprises to have their own private electric generation units. Currently, electricity is mainly

generated by hydropower, which resources, however, have nearly been exhausted. While coal-fired power generation is expected to be an alternative measure, its application has made little progress and is faced with strong opposition from the environmental viewpoint. Electric power generation in the country is not fully liberalized, and transmission and retailing of electricity are still under the control of the Government.

Deployment of telecommunications infrastructure is also insufficient and the use of Internet has only spread to major cities and towns. Due to the small capacity of telecommunication lines, Internet users sometimes feel the inconvenience of very difficult and time-consuming access. Table 2-3. and 2-4. show the situation of telecommunication services and the telephone charge system in Sri Lanka, respectively.

Table 2-3. Telecommunications services

		1995	1996	1997	1998	1999	End of Jun-00
Sri Lanka Telecom	Ordinary telephone lines	204,350	254,500	315,241	455,598	580,119	621,394
	Waiting for subscription	237,800	270,800	284,876	224,411	236,225	246,560
	Subscribers*	1.12	1.39	1.694	2.43	3.05	3.23
Cellular phone	Subscribers	51,316	71,028	114,888	174,202	256,665	307,027
	Investment**	4,139	5,307	6,870	8,842	9,941	n.a.
Public telephone	Telephone booths	1,597	2,152	2,571	4,761	5,799	7,491
	Investment**	424	610	718	1,064	1,084	n.a.
Paging service	Subscribers	9,565	10,721	10,829	10,511	10,300	7,566
	Investment**	210	221	222	222	222	n.a.

* The number per 100 inhabitants ** Cumulative total of investment (Unit: million rupees)
Source: Central Bank of Sri Lanka, State of the Economy 1999; Central Bank, Economic Research Dept.

Table 2-4. Telephone charge system in Sri Lanka

Telephone		Sri Lanka rupee (excluding tax)
Installation fee per direct exchange line (DEL) (Colombo metropolitan area)		13,500
Annual rental	Corporation	4,320
	Individual	2,400
IDD deposit	Corporation	5,000
	Individual	2,500
IDD call charge rate (per second)	The United States	1.16
	United Kingdom	1.16
	Germany	1.16
	Japan	1.01
	Hong Kong	1.01
Domestic call charge rate (per CU)	Block rate charge system, every CU from first block to 100 CU	1.10
	Second block 101CU～300CU	1.40
	Third block 301CU～500CU	2.20
	Last block Every CU at 501 CU and over	2.80

Note: CU refers to Call Unit.
Sources: BOI

2-2. Overview of the subject sectors

2-2-1. Education and IT training in school

In Sri Lanka, primary and secondary education consists of five years for primary schools (1st to 5th grade), 6 years for lower secondary schools (6th to 11th grade, which is divided into two; the first half for three years and the second half for the next three years), and two years for high schools (12th to 13th grade). Compulsory education lasts ten years i.e. until the second grade of the second half of lower secondary school. School fees are not charged from primary to university level, when operated by national or local governments. Students take the General Certificate of Education Ordinary Level (GCE, O Level) Examination, when they are in the 11th grade. Students who pass the exam are certified to go to high schools. In the second year of high school education, students take the Advanced Level (GCE, A Level) Examination. Students who pass the exam are eligible to go to universities.

Schools for primary and lower secondary education consist of public schools, private schools, and schools called Pirivenas (operated by priests at temples). Table 2-5 shows the numbers of schools, students, and teachers in those three kinds of school in 1997.

Table 2-5. Present status of primary and secondary education in Sri Lanka (1997)

Classification	Public school	Private school	Pirivenas
Number of schools	10,358	75	550
Number of students (person)	4,124,108	85,890	50,991
Number of teachers (person)	179,589	3,652	4,298

Source: Education Statistics 1998

The Ministry of Education introduced IT trainings for secondary education in 1983 by providing courses at GCE A/L in some schools as pilot projects, and these courses have been spread to other schools. The following programs in primary and secondary education are planned to introduce:

1) Primary schools (grade 1 to 5)
   Introduce IT as a supplementary learning tool for students to acquire necessary scholastic ability. This program is scheduled to start in approximately 200 schools in January 2002.
2) First half of secondary schools (grade 6 to 9)
   Students should study various subjects (mathematics, science, English and social studies) using computers and software. The program is scheduled to start in approximately 600 schools in May 2001.
3) Second half of secondary schools (grade 10 to 11)
   Given "IT" as an independent subject, students should acquire abilities to handle IT as end users. The program is scheduled to start in approximately 200 schools in May 2002.

4) High schools (grade 12 to 13)

Students should learn IT in general as a starting phase for future professional use of IT. The program was scheduled to start in approximately 100 schools in May 2001.

Table 2-6 shows the number of computer users in schools by districts.

Table 2-6. Survey of the number of computer users in schools (1999)

State	District	Number of students in the district	Computer users	Share(%)
North central	Polonnaruwa	7,740	1,565	20.2%
	Anuradhapura	21,774	9,116	41.9%
Western	Colombo	70,797	12,795	18.1%
	Kalutara	34,425	9,766	28.4%
	Gampaha	46,425	11,795	25.4%
Uwa	Monagara	18,778	3,528	18.8%
	Badulla	37,001	9,892	26.7%
South	Galle	69,193	13,743	19.9%
	Matara	31,303	6,078	19.4%
	Hambanthota	27,885	6,228	22.3%
Sabaragamuwa	Rathhnapura	32,013	8,298	25.9%
	Kegalle	43,315	9,312	21.5%
North western	Puttlam	17,206	2,581	15.0%
	Kurunegala	70,422	18,352	26.1%
Central	Kandy	64,615	18,201	28.2%
	Matale	13,271	3,648	27.5%
	N-Eliya	19,844	4,986	25.1%
Total		626,007	149,884	23.9%

Source: Sri Lanka Statistics Office

Generally, while penetration of primary and secondary education in Sri Lanka has advanced in Southwest Asia (the literacy rate was 89.3% in 1994), that of higher education is largely behind. The ratio of university students to the population of the same generation (the percentage of university students) is about 2%. In addition, there are some issues to resolve such as differences in curricula, levels of degrees, depending on educational institutions, and an inability to develop sufficient human resources both in quality and quantity to meet the industry's demands.

In higher education, there are 13 universities in Sri Lanka with about 3,200 faculty members and about 40,000 students. Major universities that have computer science and engineering related departments are University of Colombo, University of Moratuwa, University of Peradeniya, University of Kelaniya, and University of Ruhuna. It is estimated that higher education develops around 200 graduates per year in computer science, electronics and telecommunications engineering, which is far behind increasing needs for IT professionals in the Sri Lankan industries. The number

of newly enrolled students by major departments of each university is shown in Table 2-7, and expenditures on education are shown in Table 2-8. Expenditures both for higher education and university education show increasing trends.

Table 2-7. Newly enrolled university students by faculty (1999/2000)

University/ Faculty	Cultural sciences	Business administration	Commercial science	Science	Medical	Agriculture	Engineering	Others	Total
Colombo	616	116	185	422	192	-	-	193	1,724
Moratuwa	-	-	-	-	-	-	462	117	579
Peradeniya	650	-	-	452	175	217	314	182	1,990
Surijupula	600	618	183	209	150	-	-	-	1,760
Kelaniya	561	250	191	409	156	-	-	-	1,567
Jaffna	404	161	96	283	93	46	-	-	1,083
Ruhuna	461	-	220	391	130	163	99	-	1,464
Eastern	139	37	34	70	-	27	-	-	307
Southeast	85	27	26	37	-	-	-	-	175
Rajarata	97	99	-	235	-	112	-	-	543
Sabaragamuwa	252	117	-	163	-	81	-	-	613
Total	3,865	1,425	935	2,671	896	646	875	492	11,805

Note: "Others" include faculties of Law, Density, Veterinary medicine, Architecture and Mathematics.

Table 2-8. Educational expenditures (1980-1999)

(Unit: million rupees)

Description of expenditure	Year	1980	1985	1990	1995	1996	1997	1998	1999
Total Government expenditures (1)	Current	13,462	32,645	71,771	154,159	175,148	184,749	199,648	199,205
	Capital	12,029	21,530	19,529	41,723	37,639	43,982	54,160	68,736
	Total	25,491	54,175	91,300	195,882	212,787	228,731	253,808	267,941
Education expenditures (2)	Current	1,535	3,530	8,539	16,972	18,825	20,103	22,605	22,492
	Capital	264	654	1,157	3,445	4,533	5,146	6,632	7,551
	Total	1,799	4,183	9,696	20,417	23,358	25,249	29,237	30,043
(=2/1)	Share (%)	7.1%	7.7%	10.6%	10.4%	11.0%	11.0%	11.5%	11.2%
Higher education (3)	Current	137	346	956	2,284	2,473	3,056	3,608	3,642
	Capital	142	378	423	630	957	1,331	1,519	1,353
	Total	278	723	1,379	2,914	3,430	4,386	5,127	4,995
(=3/2)	Share (%)	15.5%	17.3%	14.2%	14.3%	14.7%	17.4%	17.5%	16.6%
University education (4)	Current	119	271	785	2,214	2,407	2,969	3,471	3,518
	Capital	138	318	277	625	943	1,236	1,407	1,141
	Total	256	589	1,061	2,839	3,350	4,205	4,878	4,659
(=4/2)	Share (%)	14.2%	14.1%	10.9%	13.9%	14.3%	16.7%	16.7%	15.5%

Source: Central Bank of Sri Lanka, The Ministry of Education and Higher Education

Among those universities, University of Colombo has a Department of Computer Science (DCS) under the Faculty of Science. However, the capacity of enrollment for the department is only 50 every year, and the number of graduates from the department were 17, 29 and 31 in 1997, 1998 and 1999, respectively. There are one professor, 18 lecturers, 4 programmers/system analysts and one assistant network manager as members of the DCS.

Apart from the DCS, the University of Colombo has the Institute of Computer Technology (ICT) as a central arm for IT training in the country. It provides various IT training courses with faculty members consisted of one director, one information systems manager, 11 lecturers, 2 engineers, 6

instructors and one assistant network manager. The ICT provides not only full-time training courses, but also part-time and certificate courses for a wide variety of trainees, including many from industries. The ICT commenced a new three-year IT courses named External Degree of Bachelor of Information Technology (BIT) in 2000 in order to increase a capacity in supply of IT related human resources. While the ICT prepares the standard curriculum, conducts examinations and grants degrees to students in these courses, actual implementation of teaching are operated by external, private sector training centers. The course gives students a Certificate after one year of education, a Diploma after two years and a Bachelor of Information Technology after full three years of education. Currently 9,000 students have registered for these courses, and the number of enrollment is expected to increase in the future.

The University of Moratuwa is located 15 km south of the city of Colombo, and has a Department of Computer Science and Engineering and a Department of Electronics and Telecommunications. The number of enrollment in each department is around 50 every year. A new Faculty of Information Technology at the University of Moratuwa was recently established by the Ministry of Higher Education and Information Technology Development in order to satisfy increasing needs for personnel in the industries. It is planed that the new Faculty will accept 250 new enrollments for each academic year and 50 faculty members to teach them.

Moreover, Sri Lanka Institute of Information Technology (SLIIT), a training institute and corporation, was founded in September 1999 by financing of the Government. The objectives of the organization are (a) education and training for IT engineers, (b) expansion in supply of IT professionals, (c) establishment of software development center, and (d) establishment of research and development incubation center. The SLIIT opened in January 2000 and currently has around 950 students. The number of new enrollment in 2000 was 400, of which 300 progressed to the junior, and that in 2001 was 650 against the planned 400 freshmen. The first graduates from the SLIIT are expected to come out in 2002. It is currently located in the city of Colombo, but is planned to move to Malabe, 10km east of Colombo, with a huge campus of 25 acres. While all the national universities do not charge education fee, the SLIIT asks students to pay 700 US dollars as annual tuition, which is seen almost half or one third of private IT training institutes. There is one director, one technical coordinator and 11 lecturers as faculty members. The SLIIT provides ACE Training Program with the cooperation of IBM, and also have training and exchange programs with Uppsala University in Sweden and Curtin University in Australia.

2-2-2. Industries and IT human resource development

The IT industry in Sri Lanka is relatively new, and has developed since the 1990s, and approximately 80% of the current IT-related enterprises (software development, IT services, etc.)

were established in the last decade. With the assistance of promoting measures and policies by the Government adopted after 1996 such as exemption from and lowering of customs duty on equipment necessary for the software and telecommunications industries, sales and export value of the IT-related industry in 1999 increased to Rs. 5.4 billion and Rs. 1.0 billion, respectively. Since the 1990s foreign direct investment (FDI) in the sector has progressed, and the Board of Investment (BOI) has approved 59 FDI projects, of which 40 are agreed and 17 are already in operation as of 1999. In the event that all BOI companies approved are in operation, the number of employment and the export value are estimated to increase by 6,000 persons and Rs. 7.1 billion, respectively. This would require more IT professionals in all levels as an urgent need from the industry.

Table 2-9. Major software companies registered with BOI in Sri Lanka

	Company	Subject of the business	Investing country
1	Asiasoft (Pvt) Ltd	Computer software	Sri Lanka
2	B C Software System (Pvt) Ltd	Computer software development	Sri Lanka
3	Ecode Lanka Software (Pvt) Ltd	Software	Belgium
4	Global Information Bureau (Pvt) Ltd	Computer software	Sri Lanka
5	Global Software Labs (Pvt) Ltd	Computer software	USA/ Sri Lanka
6	Golden Key Software Solution Ltd	Computer software	Sri Lanka
7	hSenid Software International (Pvt) Ltd	Software	Sri Lanka
8	Industrial & Financial Systems Sri Lanka Ltd	Computer software	Sri Lanka
9	Industrial & Financial Systems R&D Ltd	Computer software	Sweden/Sri Lanka
10	Informatics International (Pvt) Ltd	Computer software	Swede/Sri Lanka
11	Innodata Lanka (Pvt) Ltd	Data processing	USA
12	IOM Development (Pvt) Ltd	Computer software	Hong Kong
13	JBA Software Products Lanka (Pvt) Ltd	Computer software	United Kingdom
14	John Keells Computer Services (Pvt) Ltd	Computer software	Sri Lanka
15	Kopas Lanka Company (Pvt) Ltd	IT based services (website/internet)	Japan /Sri Lanka
16	Logical Tech Corporation (Pvt) Ltd	Computer software	Australia
17	Media Solutions (Pvt) Ltd	Digital computer S/W products	Sri Lanka
18	Millennium IT Software Ltd	Computer software	Sri Lanka
19	MIPAC Software (Pvt) Ltd	Computer software packages	U.K. / Sri Lanka
20	Mobinetix Systems (Pvt) Ltd	Computer software	USA
21	Palmware (Pvt) Ltd	Software	Germany
22	QA Software (Pvt) Ltd	Computer software	Australia
23	Saniford Control & Simulation (Pvt) Ltd	Computer software	United Kingdom
24	Seven Seas Computer Lanka (Pvt) Ltd	Computer S/W development and Research	Hong Kong/UAE
25	ERunway (Pvt) Ltd	Computer software development	USA / Sri Lanka

	Company	Subject of the business	Investing country
26	Unilink International (Pvt) Ltd	Computer software	Belgium

Source: Prepared by JETRO based on documents from BOI

In the Sri Lankan software industry about 50 enterprises which have more than 10 employees are estimated as currently making their businesses, and half of them are foreign affiliates, of which majorities are with the US and European capital (see Table 2-9). The number of employment in the sector is estimated to be around 4,000. Despite the small scale of the industry, there are some local businesses that have engaged for years as outsourcing developers of the US, European and Indian IT enterprises, and their technological level seems to be quite high. On the other hand, the IT sector faces many issues to be solved such as acquiring professional knowledge on international standards and introduction of new technologies.

There are several associations and organizations in IT-related industries. The Federation of the Information Industry, Sri Lanka (FITIS) is a relatively new organization established in 1996, but is a central body of the Sri Lankan IT industry, which associates all three existing organizations such as Sri Lanka Computer Vender Association (SLCVA), Sri Lanka Association for Software Industry (SLASI) and the Association of Computer Training Organizations (ACTOS). The number of member companies in the FITIS is 81. The SLCVA was established in 1988 as an organization of computer hardware vendors, having 33 member companies. The SLASI consists of around 40 software development and service companies, established in 1992. There is also Software Exporters' Association (SEA) established in 1999, with the assistance of the Export Development Board (EDB). It is estimated that more 10 to 15 small-scale firms are there in the software development business. The ACTOS is an organization that was established in 1991 by 14 private IT training institutes, and directs members a standard and the minimum level of IT trainings.

With its highest literacy rate of 91% among the South Asian countries, as well as its high rate of English understanding people, Sri Lanka is seen as the country that has a high potential for the development of the IT industry. Wage level of IT personnel is relatively low, which gives a comparative advantage for the country's IT-related industries, though there is a trend of increasing costs for those personnel (see Table2-10).

Table 2-10. Wage level of IT personnel in the software development industry

Category	Monthly wage (US$)
System manager	1,200 - 1,500
System analyst/engineer	700 - 1,200
Programmer	700 - 1,000
computer operator	250 - 500
Data input operator	100 - 200
IT trainees	50 - 150

Source: The IT industry, BOI

Major IT training institutes and schools, regardless of public or private, are listed in Table 2-11. There is also a plan to establish 50 more IT training centers under the control of the Board of Investment (BOI), and 10 of them have already opened.

Table 2-11. Major IT training centers registered under BOI in Sri Lanka

	Company	Subject of the business	Investing country
1	Asia Pacific Institute of IT Lanka	IT Institute	Malaysia / Pakistan / Sri Lanka
2	Altech Lanka (Pvt) Ltd	IT Training Centre	Japan
3	Bitech Lanka (Pvt) Ltd	Computer S/W Training Centre	Singapore
4	BAM Information Technology (Pvt) Ltd	IT-related Training Institute	Sri Lanka
5	CBS Computers (Pvt) Ltd	Training Institution	Singapore / Sri Lanka
6	Cybersoft Institute of Information Technology	S/W Related Training Institute	Singapore
7	Datalink 52 (Pvt) Ltd	IT-related Training Institute	Spain
8	DCS Training Services (Pvt) Ltd	Information Technology Training	Sri Lanka
9	DMS Training Centre	IT Training Institute	Sri Lanka
10	Gateway Centre for Information Technology (Pvt) Ltd	IT Training Centre	Sri Lanka
11	Institute of Computer Technology	IT Training Institute	Sri Lanka
12	Informatics Institute of Technology	IT-related Training Institute	Sri Lanka
13	Informatics Information Systems (Pvt) Ltd	Computer Training Centre	Sri Lanka
14	IT Lanka Academy (Pvt) Ltd	IT-related Training Institute	Sri Lanka
15	Itmin Business and Management Training	IT Training Institute	Sri Lanka
16	John Keells Institute of Information Technology (Pvt) Ltd	Computer S/W Education Services	Sri Lanka
17	Mackwoods Infotec (Pvt) Ltd	IT/ Computer Training Centre	Sri Lanka
18	Mastermind (Pvt) Ltd	IT Training Institute	Sri Lanka
19	MMBL Cyberskills (Pvt) Ltd	IT Training Institute	Sri Lanka
20	Mercantile Institute of Information Technology	IT Training Institute	Sri Lanka
21	Niranjan Institute of Information Technology	IT Training in Information Technology	Sri Lanka
22	Sri Lanka Institute of Information Technology	Training Institute	Sri Lanka
23	Stargate Phone & Conn. Data Lanka	IT-related Training Institute	Germany
24	Singapore Informatics Computer Institute Ltd	Computer Training Institute	Singapore
25	Unisoft Institute of Technology (Pvt) Ltd	Training Institute	India / Singapore
26	Wytech (Pvt) Ltd	Training Centre – Graphic Design	Australia / Singapore

Source: Prepared by JETRO based on documents from BOI

The number of private institutes is increasing because computer literacy is required in many business

fields. It is reported that some private institutes are unable to provide training of an acceptable standard. Under this situation, the CINTEC in cooperation with the ACTOS (Association of Computer Training Organizations) started the National Examination for Information and Communication Technology (NEICT) to standardize the training quality in private institutes. NEICT consists of four stages; national diploma in applied computing, national advanced diploma in applied computing, professional diploma in information and communication technologies, and master diploma in information and communication technologies. The syllabi for each stage are prepared in cooperation with India. At the end of 1999, about 26 private institutes provide lecturers for National Diploma along with such syllabi and 9 institutes for National Advanced Diploma. The other two courses are scheduled to start in 2001

All companies in the IT sector consider trainings for personnel as one of the most important subjects, and mainly utilize training courses and seminars, of which lecturers are staff from companies like IBM, reflecting the recognition that software-related companies have the most advanced technologies. The ACTOS has a function of bridging information through receiving needs for human resources of the software industry from the Sri Lanka Association of Software Industry (SLASI) and providing gathered information to affiliate member institutes. Currently, the needs for trainings on Oracle, C++, and JAVA are recognized to be very high. Needs for training are also strong even among trainers of IT training centers and teachers/students at universities, particularly in relation to multimedia applications, software development using JAVA, C++, Visual Basic and Oracle. These findings were clearly observed by the Supplementary Study for Establishment of Multimedia Technology Training & Development Center, conducted in July 2001 (Refer to the report of the Study).

Compared with the global expansion of Internet, the situation in Sri Lanka is still in the infant stage. The Internet age in the country began in 1997. In 1996, there were only seven Data Communication Services (DCS) enterprises with small number of subscribers. The Sri Lanka Telecom (SLT) started to provide Internet services in the same year. Although the number of subscribers increased to 13,774 in 1999, Sri Lanka still remains at a low level of subscription (see Table2-12). The diffusion rate of Internet in the country was almost 0.1%, or remained at the same level as China in 1997. However, it is recently estimated that the number of subscribers increased to more than 20,000, which makes the rate of subscription almost 1% due to a rapid increase.

Table 2-12. Number of Internet and electronic mail users

Year	1995	1996	1997	1998	1999
Users	634	1,200	3,683	8,560	13,774

Source: SLT Annual Report 1999

2-3. Strategy of the Government

Concerning the national policy for information technology, nearly 10 ministries and government offices, including the Ministry of Higher Education and Information Technology Development (MHEITD), have implemented IT-related policies. There was a tendency that these authorities independently and inconsistently carried out their own measures and policies to promote IT, and negative effects were sometimes observed such as duplication and failure of IT policies. The MHEITD and the Computer and Information Technology for Sri Lanka (CINTEC) established in 1984 and transferred to be a substructure of the MHEITD in October 2000 began to work as a leading and coordinating bodies in IT policies. The MHEITD had reviewed and reorganized the draft of the National Plan for Information Technology for Sri Lanka prepared by the CINTEC with an authorized budget of Rs. 2.5 million for the fiscal 2001. With the reduction of ministries, in October 2001, the CINTEC came under the new Ministry of Posts, Telecommunications and Information Technology Development (MPTITD). The subjects of education and higher education have been assigned to a single ministry, Ministry of Education and Higher Education. In the future, all ministries and government offices are expected to develop their policies following the National Plan under the control of the MPTITD and the CINTEC

The National Plan for IT consists of issues such as computerization of government administration, infrastructure building for communication, human resource development, IT sector development, preparation of legal system, promoting tourism and agriculture sector development, health and public welfare, preparation of statistics, setting up computer system in financial area, EDI/Electronic commerce (preparation of legal system related to IT, e-security, and education on Internet), and so forth. In the field of computer education, the National Plan includes measures such as IT training at primary education, advanced IT education at university level, and training of teachers at schools. In particular, development of engineers who are competent in Internet, JAVA, multimedia, and network related technology, those who industrial sectors have strong needs to recruit, has been considered as very important. Below is the outline of the National Plan for IT, which was scheduled to submit to the Parliament in August 2001.

- IT is one of the key factors for an economic development. All economic sectors should recognize the importance.
- As the coordinating authority of IT development, the CINTEC will prepare, review, implement and monitor IT policies. And in cooperation with the institutions concerned, the CINTEC will determine the quality standards of IT training, products and services.
- With regard to the most importance of human resource development introduce IT training into primary and secondary education.
- Promote teachers' training at various levels by providing incentives. Also, establish and

conduct national examinations for IT at various levels.

- Universities should expand their roles in IT personnel training and reinforce the courses on the latest technologies at a professional level. Meanwhile, close relationships among universities, research institutions and industries should be built.
- Strengthen domestic and international telecommunications network.
- The government, financial institutions, development and commercial banks and other industries should introduce and utilize new technology such as e-commerce and EDI.
- Provide incentives in capital and other measures to promote the IT related industries and fields.

Also, the CINTEC has indicated the following directions concerning the revision and preparation of IT-related laws:

(1) Evidence Act

Since the Evidence Act established in 1985 has become out of dated with the Information Age, the CINTEC committee reviewed the act and in 1995 enacted the Evidence (Special provisions) Act No.14 of 1995. The committee plans to adopt a new law focusing on accuracy and reliability of information.

(2) Computer crime law

The Penal Laws of Sri Lanka were reviewed to deal with computer crimes, and the computer crime draft law was prepared and is now under consideration by the government.

(3) E-commerce law

Forming a legal framework to promote e-commerce is planned.

(4) Intellectual property law

Adopting the law to regulate and protect the rights of creation, innovation and inventions is the most important. Provisions that prevent owners or users of intellectual property from utilizing these rights seeking their own interests should be incorporated in the law, as well as the provisions to protect intellectual property rights.

2-4. Past and current projects by the Government and other groups in the area of the project concerned

For IT related cooperation, the World Bank adopts IT for the following education projects, but none of them are targeted at promoting the IT sector itself and IT-related industries.

a) GEP (General Education Project)

A five-year project started in February 1998, with a total cost of 83.4 million US dollars. Major contents of the project are curriculum development, text printing, rationalization of school facilities, functional enhancement of libraries, and educational management. In this project, computers were supplied to 400 schools in five years (80 schools per year).

b) Reform of Tertiary Education

Conventional tertiary education does not meet the needs of industries, and the unemployment rate of university graduates has been high. This project aims to increase opportunities for students to receive tertiary education, and to reform the education system so that graduates have a higher possibility to find jobs. This project is under consideration, and it has not been implemented yet.

c) Distance Learning Project (pilot project)

The aim of this project is capacity building of policy makers and managers by establishing a remote education center. With this objective, planning for restructuring is under way.

Similarly, the Asian Development Bank (ADB) also implements IT related cooperation by adopting IT for the following education/human resource development projects, and none of them is targeted at the IT sector itself.

a) Skills Development Project

Establishment of National Information Technology Centre in Galle and two regional IT centers. The National Information Technology Centre has a capacity to train 300 people per year and regional IT centers have a capacity to train 100 people per year. The target students are those who have acquired how to use OA equipment.

b) Science and Technology Personnel Development Project

The ADB provides assistance at university level. The project includes teachers' training in textile design, biology, agriculture, IT, sending teachers to graduate schools overseas, and supply of equipment such as computers.

c) Secondary Education Modernization Project

The subject of this project is 1,200 secondary schools throughout Sri Lanka. The budget is 15 million US dollars, which is the largest among ADB's current education projects in Sri Lanka. Teachers' training and improvement in equipment and facilities are the main targets.

d) Post-secondary Education Project (PPTA)

This project aims to promote remote education in cooperation with universities. Open university will carry out the project, which is planned to start in 2003.

Although the World Bank and the ADB are planning to supply 5,000 computers in total through above mentioned projects and others, there are still many problems such as insufficient telephone and power infrastructure, and a serious shortage in teachers who are able to use computers.

The Japanese Government has provided a technical cooperation for the establishment and implementation of the Institute of Computer Technology (ICT) of the University of Colombo since 1987 though JICA. JICA also conducted a one and a half year development study for the Master

Plan for Industrialization and Investment Promotion by the Ministry of Industrial Development (MID), in which the master plan for the development of the IT service industry was designed and proposed as one of the strategically important industrial sectors. A follow up study was also conducted in 2000 in relation to the development of "Technopark" to realize some of the action plans for promoting IT-related industries proposed by the JICA's development study.

3. Present conditions and concerns of the subject

3-1. Institutional framework of the subject

Based on "National Computer Policy for Sri Lanka" submitted by the advisory committee to the President, the CINTEC was founded in 1984 under the jurisdiction of the President. After the cabinet reshuffle in October 2000, the Ministry of Higher Education and Information Technology Development (MHEITD) was established, and the CINTEC became an organization that is under the jurisdiction of the MHEITD. The CINTEC is involved in formulating the National Policy for Information Technology in areas such as school education (primary, secondary and higher education), computerization of administration, and promotion of IT sector. With the cabinet change in October 2001, the CINTEC was attached to the Ministry of Posts, Telecommunications and Information Technology Development (MPTITD), and the Ministry of Education and Higher Education (MEHE) was established.

The Institute of Computer Technology (ICT) of the University of Colombo is under the jurisdiction of the MEHE. The ICT was founded in 1987 when JICA implemented project-type cooperation with the objective of training engineers for the IT sector. The ICT is a leading organization in IT trainings in the country with a total of around 40 staff, including the director, one information system manager, 11 lecturers, 2 engineers, 6 instructors and 1 assistant network manager. It provides a wide variety of IT training courses not only for students of University of Colombo, but also IT personnel in industries. A summary of major courses is shown in Table 3-1 and the details are described in the Annex.

Although the ICT is one single unit under the University of Colombo, it has independency in terms of budget and accounting. In order to meet the demand for IT-related human resources, the Computing Service Center (CSC) of the ICT has conducted evening and weekend courses. This is also a part of ICT's efforts to gain its own financial sources. Table 3-2 shows how the ICT budget has changed, and the relevant part of the organization chart of the MEHE, the University of Colombo, and the ICT is shown in Figure 3-1.

Table 3-1. Major IT courses in the ICT

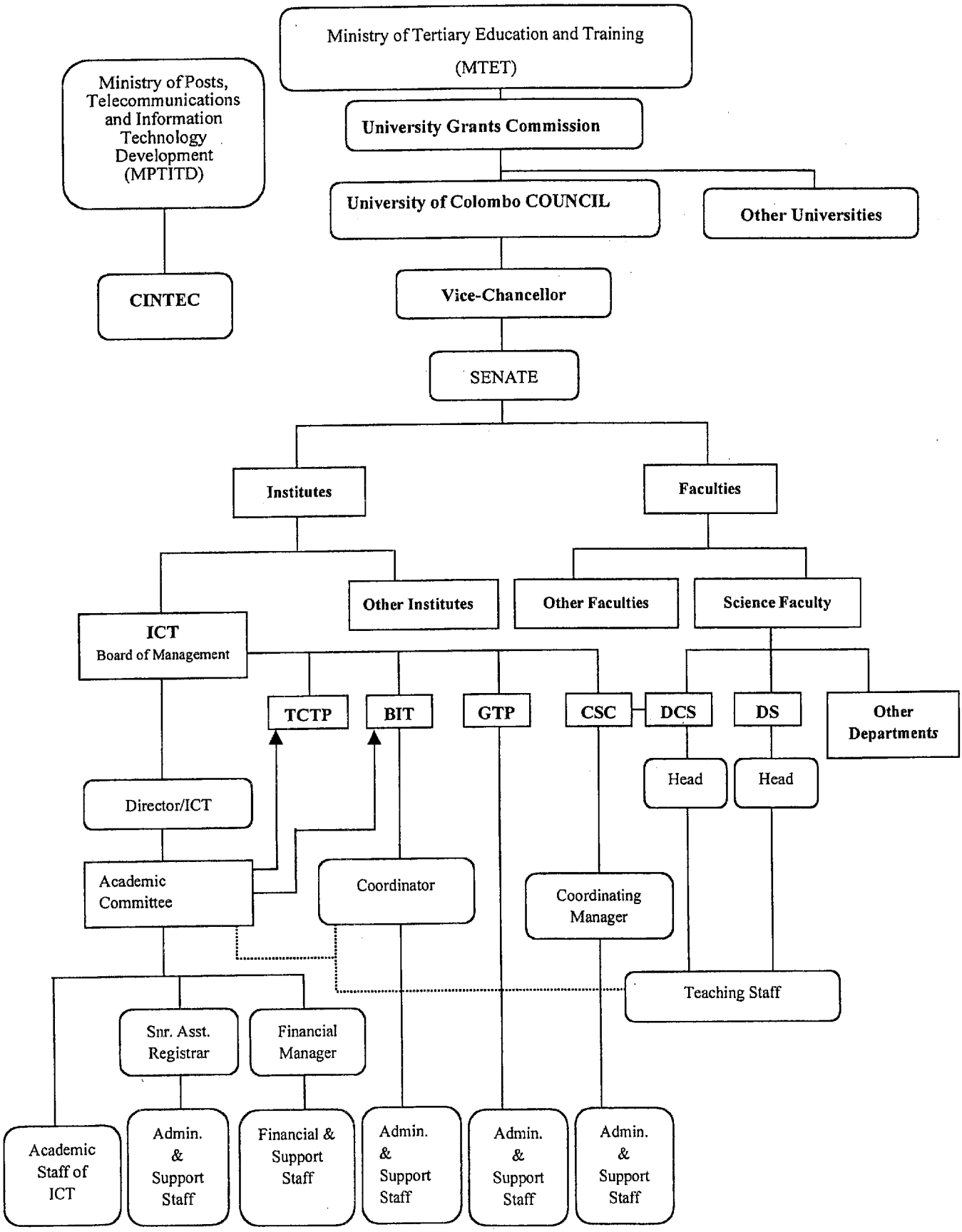
Courses	No of students	Duration	Fee(Rs.)
Post Graduate Diploma Courses			
Post graduate Diploma in Computer Technology (Full-time)	50 students/batch x 2 (100 students/year)	1 year Full-time	30,000
Post graduate Diploma in Computer Technology (Part-time)	50 students/batch x 1 (50 students/year)	2 year Part-time	40,000
External Degree Program			
Bachelor of Information Technology (BIT)	5,123 passed the enrollment test, and 4,562 registered in 2000. 8,185 applied for the enrollment for 2001.	3 years External	Registration & Examination Fees only
Certificate Courses			
Certificate Course in Software Design and Development	50 students/batch x 2 (100 students/year)	6 months Part-time	15,000
Certificate Course in the use of Information Technology for Development	50 students/batch x 2 (100 students/year)	6 months Part-time	15,000
Graduate Training Program			
Graduate Training Program in Information Technology (GTP-IT)	100 students/batch x 2 (200 students/year)	4 months Full-time	25,000
Short-term Training Courses			
Programming in C++/Visual C++	20 students/batch x 5 (100students/year)	50 Hrs	10,000
Training course on Software Design and Development	50 students/batch x 3 (150students/year)	175 Hrs	15,000
Local Area Network using Windows-NT	20 students/batch x 6 (120students/year)	40 Hrs	12,000
Java Programming for the Internet	20 students/batch x 6 (120students/year)	40 Hrs	12,000
Programming in Visual Basic	20 students/batch x 5 (100students/year)	40 Hrs	12,000
Upgrading & Maintenance of Personal Computer Systems	20 students/batch x 5 (100students/year)	40 Hrs	12,000
Computer Aided Drafting using Auto CAD 2000	30 students/batch x 4 (120students/year)	80 Hrs	15,000
Advanced Multimedia Web Design & Development Techniques	10 students/batch x 12 (120students/year)	50 Hrs	20,000
Web Design & Development Techniques	20 students/batch x 6 (120students/year)	50 Hrs	12,000

Source: ICT

Table 3-2. Change in ICT budget (Rs. 1,000)

	1995	1996	1997	1998	1999	2000	2001 Prospect	2002 Prospect
Income	**7,683**	**7,101**	**8,251**	**8,765**	**12,430**	**9,960**	**13,200**	**15,038**
01 Government grant for standing expense	6,000	6,403	6,780	8,000	9,485	7,085	8,710	10,250
Other grants	-	-	-	-	-	-	1,500	1,500
02 University grant charge	-	-	-	-	-	-	-	0
03 Loan and Interest on	104	88	112	114	76	94	95	105
04 Interest on deposits	8	9	10	10	10	20	20	22
05 Miscellaneous revenue	134	44	66	123	131	72	100	110
06 School fee	1,405	540	1,240	473	2,658	2,606	2,600	2,860
07 Application fee	28	15	38	39	64	69	151	166
08 Library charge	0	0	1	3	0	3	4	4
09 Test fee	4	2	5	4	6	11	20	22
Expenses	**8,164**	**9,124**	**11,482**	**12,129**	**12,466**	**11,662**	**13,087**	**14,404**
Balance	**-481**	**-2,023**	**-3,232**	**-3,364**	**-35**	**-1,702**	**113**	**634**

Figure 3-1. Organization chart of the Ministry of Tertiary Education and Training
University of Colombo and the ICT



3-2. Present conditions and concerns of matters related to the project

After the Government of Sri Lanka declared the "Year of Information Technology" in 1998, it was expected that strong reinforcement for the IT sector would be carried out. As already described, the IT sector in Sri Lanka is quite new. It has developed since the 1990s, and the value of its sales and exports in 1999 were about Rs. 5.4 billion and Rs. 1 billion, respectively. In 2000, the value of exports of software was estimated to amount to 55 million US dollars, which marked a large growth, considering there was no export in this field in 1996. Currently, however, the conditions in Sri Lanka are not sufficient to further develop the IT sector from the following point of views; 1) human resources, 2) infrastructure, 3) market, and 4) organization. Particularly, a shortage of IT human resources has continued to be a bottleneck to accelerate a development of the IT sector and of utilizing IT in various industrial sectors. In this respect, capacity building in IT area is an urgent task for Sri Lanka today with the following issues to be solved:

(1) Shortage in human resources in IT due to insufficient capacity of educational/training institutions

Although the demand for professional IT engineers in Sri Lanka is said to be 2,000 persons per year, the supply is only 200 to 250 persons, and the human resources that the industry seeks are insufficient both in quality and in quantity. The background to the substantial gap between supply and demand is an insufficient capacity of universities in Sri Lanka, including that of the University of Colombo. It is estimated that 8,000 qualified persons are currently waiting for admission due to insufficient capacity of universities. Although there are almost 150 institutes offering IT training courses, the training level is generally too low to supply IT professionals. Although the ICT launched the 3-year BIT degree courses and the Graduate Training Program, that could sharply increase the capacity of IT trainings and the Sri Lanka Institute of Information Technology (SLIIT) started a diploma course, the supply capacity and quality are still insufficient and should be further improved. Therefore, strengthening the capacity building of IT-related educational institutions and training schools is very important. It is imperative that IT training institutes and schools increase their capacities through appropriate "trainers' training" backed by advanced technologies in IT education and trainings. In this respect, introduction and diffusion of highly efficient IT training such as Web-Based Training (WBT) is strategically and practically important. At the same time, strengthening of institutional framework for the development of IT trainers and trainees in the field of WBT will be required to the country's sustainable development of IT related human resources.

(2) Need for high quality certification of IT skills

In order for engineers who received IT training to certify their skill levels, popularizing a credible certification system is required. Currently, however, certification system of IT

skills of U.K., India and Australia are adopted only in some parts of the country. Although the CINTEC has introduced the National Examination in Information and Communication Technologies (NEICT) since 2000, many still observe that Sri Lanka needs further efforts to establish a standardization of high quality certification of IT skills. In addition, although the number of private IT training centers has rapidly increased due to a large demand for IT training, there are problems such as the differences in curriculums and levels of degrees over the higher educational institutes. The BIT degree of ICT, by attracting thousands of students has now become a defacto standard.

(3) Drain of human resources

High-skilled IT engineers have drained away to other countries to seek jobs with higher wages. In addition, the educational institutions have problems in those who are trained as IT trainers have been attracted to IT-related companies due to the wage differential between the business sector and the education sector.

3-3. Significance of the Project for cooperation strategy of Japan

(1) Diplomatic benefit

The Project is a technical cooperation in the field of IT, which will be implemented based on the IT Charter adopted in Kyushu-Okinawa Summit in July 2000. In October 2000, the Minister of Foreign Affairs of Sri Lanka visited Japan, and the Minister requested the Prime Minister and the Minister of Foreign Affairs of Japan to cooperate with Sri Lanka on the development of IT field. The year 2002 also marks the 50th anniversary of diplomatic relationship between Japan and Sri Lanka. Considering these circumstances, the Project not only fits the need of Sri Lanka but also can be a symbolic cooperation project.

(2) Benefit from the increase in supply of reasonable and high quality IT engineers of Sri Lanka

Japanese IT companies that have advanced into Sri Lanka and those that have made use of Sri Lankan businesses as outsourcing ones could have opportunities to enjoy anticipated results of the Project. Even though those Japanese companies are not many at the moment and a small number of Japanese firms would enjoy benefits from the quality and quantity improvement of IT-related human resources in the near future, potential foreign direct investment (FDI) companies, including Japanese firms, would receive benefits from the Project.

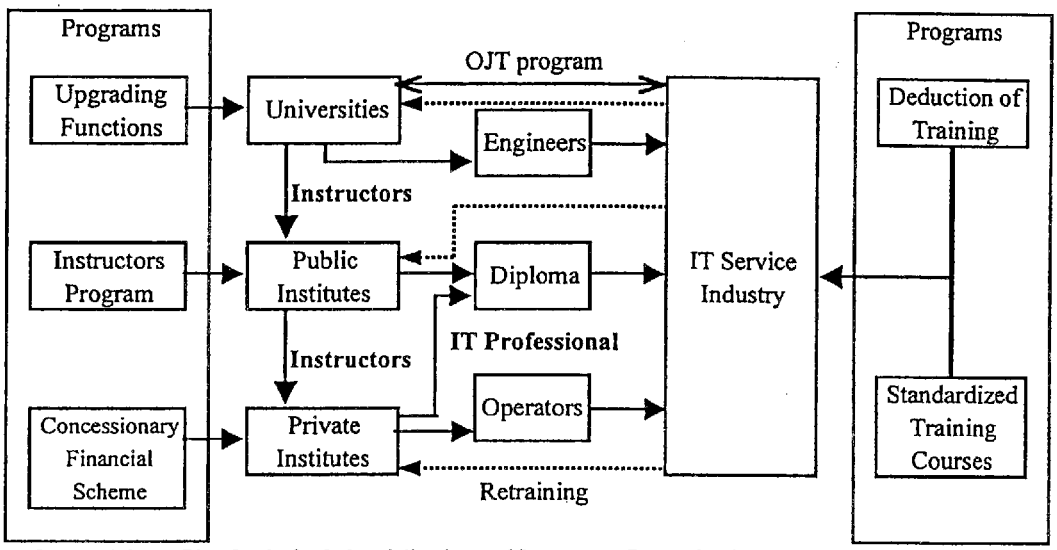
(3) Consistency and continuity with the past assistance programs

In the final report of the Master Plan Study for Industrialization and Investment Promotion in July 200, which was reported to the Ministry of Industrial Development by JICA, the following issues were discussed and proposed.

"The Supply capacity of IT professionals will be increased through (i) establishment of faculty in IT at universities, (ii) expansion of the public and private institutions, (iii) training of

instructors, (iv) promotion of linkages between IT industry and academia, and (v) establishment of re-training systems. Establishment of 50 IT training institutes announced by the Budget Speech 2000 will be integrated into this program. Training of IT instructors is in urgent need. In the initial stage, instructors will be trained at some selected universities where the Centers of Excellence will be set up for some selected IT technologies. In the later stage when the Smart Center is established in the proposed Technopark, the training and re-training unit will be established to offer courses for training of IT instructors."

Figure 3-2. Supply of IT Professionals proposed in the JICA Development Study



Source: Master Plan Study for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka, JICA, July 2000

Cooperation project by Japan in the field of capacity building to promote a supply of IT professionals in Sri Lanka will completely match with the idea of this proposal, and implementation of the Project makes the Government of Japan to take a consistent and continuing approach in order to make more fruitful of the past assistance programs.

4. Project strategy

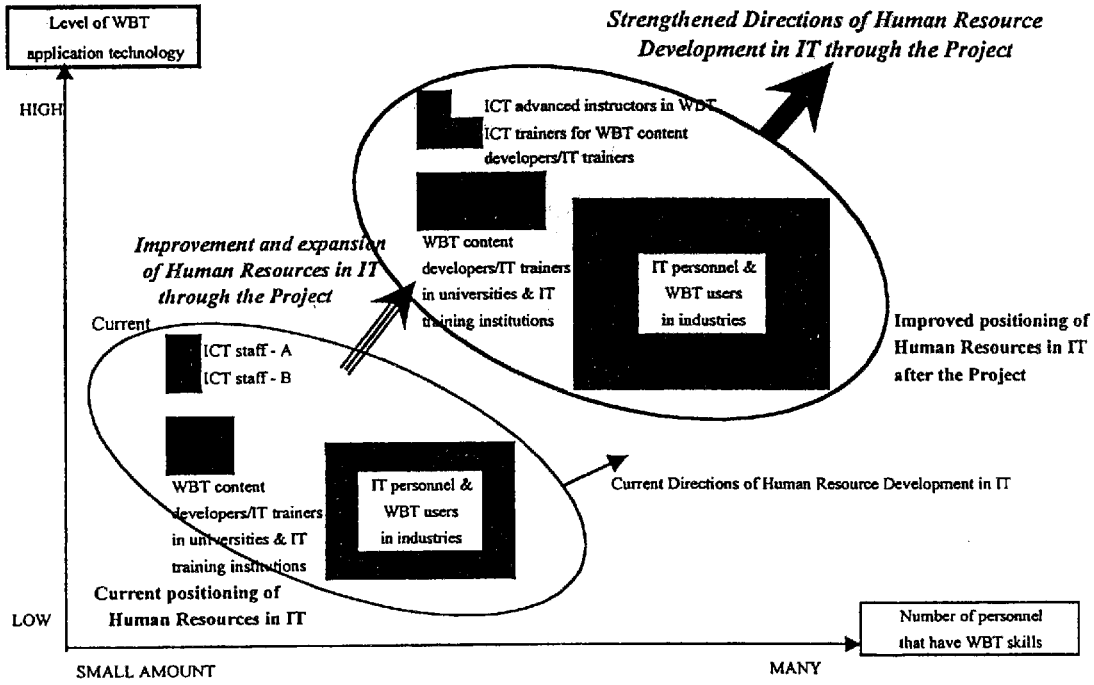
4-1. Project strategy

As already described, strengthening an institutional mechanism that develops IT human resources in an effective manner both in terms of quality and quantity is an urgent need for the stainable economic development of Sri Lanka.

The Project is to contribute to increasing the capacity of the ICT, which, together with the DCS, is a central and the most advanced IT research and training institution in the country, by transferring

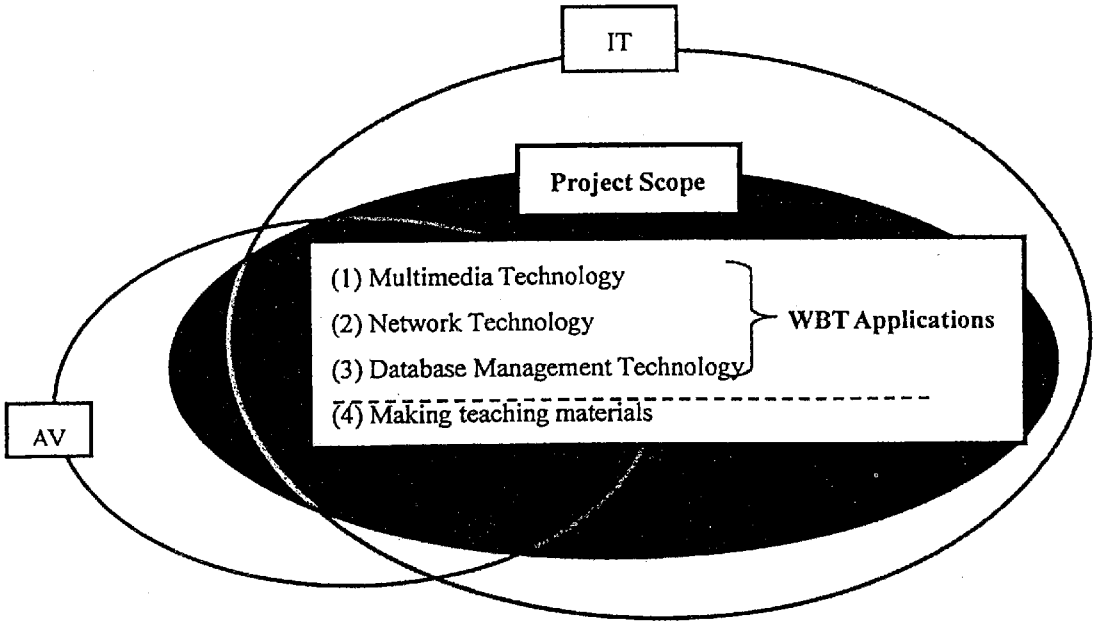
related technology from Japan. The ICT should establish an organized system in order to be a more efficient, sustainable IT training institution in terms of expertise, facilities, machinery and equipment. The outputs and achievements of the Project, increasing capacities and technology level of both the ICT itself and ICT staff, should effectively be shared and diffused to the DCS and teaching staff and researchers at the University of Colombo, other universities and IT training institutions, and finally to all IT personnel and WBT-skilled staff in Sri Lankan industries, who potentially have opportunities to receive IT trainings (Figure 4-1).

Figure 4-1. Image of Strategies and Directions of the Project



The focus of technology area in the Project is in the field of Web-Based Training (WBT). There is a strong problem consciousness in the ICT that it should increase its capacity in human resources in this area, particularly of advanced "multimedia" technology. Even though multimedia technology is one of the essential parts of IT, it is rare that multimedia technology is used alone for IT application when considering the current condition and prospects of the IT industry. In this respect, effective interaction and connection of multimedia technology with such other technology as network, security and database are required in the form of an integrated "WBT" application for upgrading IT in various fields. Therefore, the Project should include a transfer of all these related technology elements (Figure 4-2). It is also observed by an interview survey by the JICA first preparatory study team for the Project that lecturers and instructors in the ICT have some more room for technology transfer from Japan to be able to become competent enough to train IT trainers in WBT application field, even though all of them have enough knowledge and expertise in most technology area in IT.

Figure 4-2. Project Scope (Technology elements in the Project)



Through the Project it is expected that project counterparts, the ICT lecturers and instructors, increase their technology level in WBT applications, and various IT training courses in the ICT be reorganized and sometimes newly introduced in order to increase both opportunities and level of training in the field of WBT applications. Because the ICT has a wide variety of IT training courses, upgrading the skills of lecturers and instructors in WBT applications would result in direct impact on increasing technology level of many IT trainees in those ICT training courses.

Design, development and implementation of some WBT applications will be examined as model cases in the course of the Project, in order to clarify both effectiveness and constraints of those developed WBT. WBT is to be conducted not only for ordinary students and trainees of the ICT, but also for teaching staff and researchers, who are candidate WBT content developers and IT trainers, at universities, IT training institutes and industries. Particularly, inviting teaching staff and researchers from the Universities of Colombo, Moratuwa, Peradeniya, Kelaniya and Ruhuna is seriously considered, taking into account that those universities have IT related departments in the faculties of Science or Engineering and large potentials for development of IT related human resources. Teaching staff and researchers form those universities, IT training institutes and industries, who receive training held at the ICT, may develop their own WBT content or conduct training related to WBT in their own bases, which could disseminate achievements of the Project to a wide range of people. Web-based curriculum and contents with text in Singhalese or Tamil would also be prepared in the Project. One of the WBT applications developed in the Project could focus on the subject that trains IT trainers in relation to WBT applications. Furthermore, by utilizing the advantageous

nature of WBT, the ICT could allow many other universities, IT training institutions and industries to use developed WBT methodologies, materials and contents in an effective manner. Particularly, the ICT is planning to introduce a training module utilizing developed WBT into its BIT program that has currently more than 9,000 registered students. Even though detailed subjects for real implementation of WBT are to be considered in a later stage, it should be noted that the Project has a large potential to diffuse advanced WBT technology in a very effective way to many IT-interested people (See Table 4-1).

Table 4-1. Scope of the Project and target group

No	Target group	Activities/benefits description	Instructors	Place of activities
1	ICT advanced instructors in WBT (Direct counterparts for Japanese experts) *6 ICT staff*	1. Transfer WBT technology/methodology 2. Develop WBT material/archive 3. Develop training material for WBT 4a. Train trainers for WBT content developers/IT trainers 5a. Train WBT content developers/IT trainers 6a. Train students and trinees at the ICT	Japanese experts	ICT
2	ICT trainers for WBT content developers and IT trainers (Indirect counterparts for Japanese experts) *18 ICT staff*	4b. Receive training noted 4a, when necessary 5a. Train WBT content developers/IT trainers 6a. Train students and trinees at the ICT (3. Develop training material for WBT) (4a. Train trainers for WBT content developers/IT trainers)	ICT advanced instructors in WBT, when necessary (Japanese experts, when necessary and possible)	ICT
3	Teaching staff and researchers at universities and IT training institutes (Candidate WBT content developers and IT trainers) *200 persons*	5b. Receive training for WBT content developers/ IT trainers noted 5a. 6a. Develop WBT content or Conduct WBT	ICT advanced instructors in WBT, ICT trainers for WBT content developers/IT instructors	ICT
4	Students and trainees at the ICT and BIT Program (and hopefully students and trainees at universities and IT training institutes) *at least 1,480 persons*	6b. Use developed WBT content or Receive training of WBT	Teaching staff and researchers at ICT (and hopefully the same at universities and IT training institutes)	ICT, (and hopefully universities, IT training institutes and industry)

The Project also aims at increasing ICT's capacity on research and development (R&D) in some fields in WBT applications. Because Information Technology advances every moment, it is not enough in the Project to transfer the most advanced technology among currently existing WBT applications, in order to assure that the ICT keeps its role as a center of advanced IT trainers' training in the field of WBT in a sustainable manner. It is important that the ICT would enhance effective R&D capabilities relating to WBT through the Project.

4-2. Project Implementation

4-2-1. Ability of the counterpart

a) Eligibility of the counterpart organization

The ICT is the most prominent and influential IT training institution in Sri Lanka, having the most advanced IT training staff and IT infrastructure, together with the DCS, in the country. In this respect, having the ICT as a counterpart organization of the Project can expect a large scale of positive impacts on increasing quality and quantity of human resources in IT in the country through both in-house training at the ICT and diffusion of Project outputs to other universities and IT training institutions. Originally, the Sri Lankan side was willing to establish an independent Multimedia Technology Training and Development Center within the ICT to implement the project. However,

considering continuity of the Project, it was agreed that the ICT itself, not an independent organization, implements the Project. The ICT already organize various IT training courses that cover wide range of IT personnel. The ICT is planning to review and reorganize existing diploma/certificate courses, utilizing the outputs of the Project. Curricula and teaching methodologies in those existing courses are to be reviewed and new modules of courses in the field of WBT application are to be introduced.

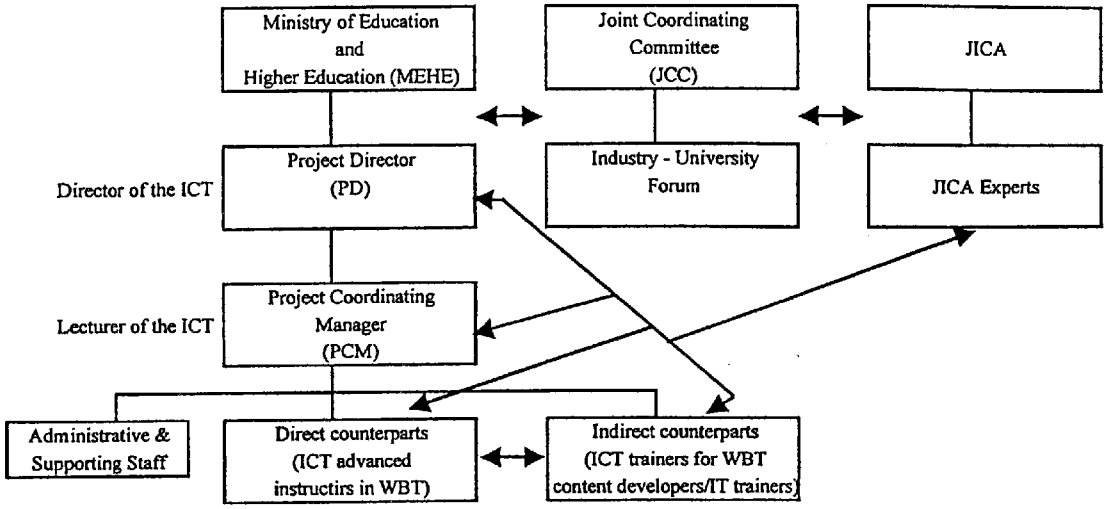
b) Budget

Because the Project center is to be located at the ICT, the ICT should prepare a budget for the buildings, facilities, related equipment and operating costs for the Project except major equipment provided by Japan. The ICT is ready to prepare appropriate amount of budget for the Project, as shown in the Annex. In the course of implementing WBT in the Project, participations by teaching staff and researchers of Universities of Colombo, Moratuwa, Peradeniya, Kelaniya and Ruhuna are expected as well as those from other universities and IT training institutes. The University Grants Commission under the Ministry of Education and Higher Education is expected to prepare a budget for participations by those university staff and to make necessary arrangements for them to take a certain length of leave, in order to receive training held at the ICT.

c) General scheme

The Project will be implemented based on the following organizational structure (Figure 4-3). Proposed functions and members of the Joint Coordinating Committee (JCC) are shown in the Annex. The Industry - University Forum, which is an attached organization to the JCC, will be organized in order to share information and to have opportunities of interactive discussions in relation to WBT and the Project among important members from industries, universities and government bodies.

Figure 4-3. Implementation Structure of the Project



d) Management ability of the organization

The ICT is the designated organization to implement the project. Even though it is a part of the University of Colombo, the ICT itself has an independent authority for budget and accounting. The wage level is relatively high in the ICT, and retention of staff and employee is high. Also, as a central organization for cultivating human resources in the IT sector, the ICT has implemented a number of projects such as personnel training programs for the IT sector and IT related research and development. The ICT has a proven track record of project management, however, some tasks are still to be challenged, including improving its ability of effectively coordinating IT training programs among various IT-related institutions and organizations.

The ICT provides information technology Post Graduate Diploma and BIT courses, and also has an IT utilization course for development/structured system analysis and design or software design and development. These courses as well as the third country-training program provided by JICA, have offered an adequately high standard of education. In total, the ICT and the Department of Computer Science have not less than 8 PhDs and 20 Masters of Science specializing in IT-related subjects. Thus, the ICT can be evaluated as having high level of technology.

e) Prospect of acquiring counterpart personnel

Professor V.K. Samaranayake, Director of ICT, and Mr. S.T. Nandasara are planned to be Project Director (PD) and Project Coordinating Manager (PCM), respectively. Other candidates both for direct counterparts and indirect counter personnel in the ICT are tentatively nominated, as attached in the Annex. It is planned that the ICT increases its permanent staff in order to implement effective technology transfer in the Project and also to increase its capacity in human resource development in IT.

f) Past experiences

The ICT, the counterpart organization for the Project, was founded in 1987 when JICA implemented project-type technical cooperation (Sri Lanka Computer Center Project) with the objective of training engineers for the IT sector. This project was implemented to train software engineers, who were few at the time, for general-purpose computers. Follow-up (from April 1990 to March 1991) and Aftercare (from August 1995 to July 1996) programs were also implemented. Using the result of the Project, the ICT has implemented training programs for third countries in terms of system analysis and design since 1993, having accepted 15 trainees annually from Asia-Pacific countries (from 1993 to 1997). It also started a personnel-training program on IT systems engineering for third countries (Phase 2) in 1998. The program has been opened to participants from African countries as well (from 1998 to 2001). Furthermore, the ICT has implemented a number of projects such as training programs for the IT sector and IT related research and development as a central organization for cultivating human resources in the IT sector.

4-2-2. Possibilities of acquiring human resources

It is necessary to dispatch Japanese experts on IT training and education using IT in order to develop curriculum in terms of IT utilization. In the areas of technology transfer of IT related techniques such as multimedia, network, database and WBT application, it is also necessary to dispatch experts or engineers from Japan. The needs for advanced IT related experts and engineers are very high in any country, and it is difficult to hire them for a long period. Therefore, it is planned to mainly acquire experts and engineers on a short-time basis, considering the kind of expertise or technology necessary in each stage of the Project. Specifically, JICA would consider of recruiting Japanese experts by the means of contracting some parts of the Project with private companies in the IT sector.

4-2-3. Cooperation System

The aim of the Project is to promote human resource development in IT at the level of higher education in Sri Lanka, and the other donor agency such as ADB have some plans to cooperate in this field. The Mining and Industrial Development Cooperation Department of JICA would take full responsibilities of organizing and managing the Project from the Japanese side, with a full support from the Regional Department of JICA. Because many other cooperation projects in relation to IT in the Southern and Southeast Asia are planned and being implemented by JICA, effective utilization and interaction of activities with those resources would be considered. One possible example of such an interaction would be a participation of Sri Lankan counterparts to the third country-training program held in Thailand, where JICA is scheduled to implement package cooperation for IT human resource development, including a project-type technical cooperation, "The Project of the Capacity

Building on the Development of Information Technology for Education". JICA would seek for carrying out coordination with other donors and other cooperation projects, as well as examining specific measures to realize synergy effects with those programs in each step of the Project.

4-2-4. Sustainability

Preparation of training courses by WBT for each level is proposed as an essential part of the Project. It includes the development of teaching materials for training courses, implementing WBT for students and trainees through IT network, and moreover constructing multi-media archives (database) in the ICT. These are to be continuously managed and operated by the ICT during and after technology transfer of the Project with an increased capacity of the ICT enhanced by the Project.

4-2-5. Special considerations

The Sri Lanka Government Army has continued fights with Liberation Tiger for Tamil Eeelam in the north and east regions of the nation, particularly in Jaffna Peninsula. The people still face a high level of social tension. Recently a sign of peace with LTTE has started to appear. On such a condition, it is a big challenge as to whether the Government Army soldiers, totaling around 100,000, will be able to get jobs after leaving the Army. It should also be reminded that Sri Lanka still does not have sufficient electricity infrastructure, thus causing an electricity shortage, particularly in some local areas. Because the Project site is in Colombo, there will not be major problems in terms of basic electricity and telecommunication infrastructure. However, in the course of the Project, these factors should always be in some consideration in the provision of resources and implementation of project activities.

5. Basic plan of the project

5-1. Overall goal

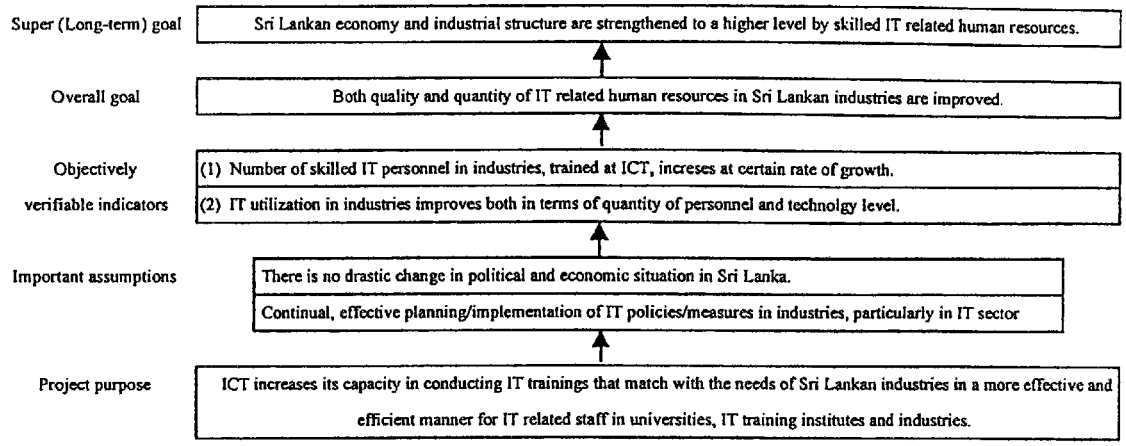
Project Design Matrix (PDM), a summary table of the Project, is shown in Annex 1 and Plan of Operation (PO) is summarized in Annex 2.

The overall goal of the Project will be "Both quality and quantity of IT related human resources in Sri Lankan industries are improved". The final long-term goal (super goal) beyond the Project will be "Sri Lankan economy and industrial structure are strengthened to a higher level by skilled IT related human resources". Whether the overall goal is achieved or not will be verified by using the following two indicators:

(1) Number of skilled IT personnel in industries, trained at ICT, increase at certain rate of growth, and;

(2) IT utilization in industries improves both in terms of quantity of personnel and technology level.

Figure 5-1. Relationships between super goal and project purpose (Image)



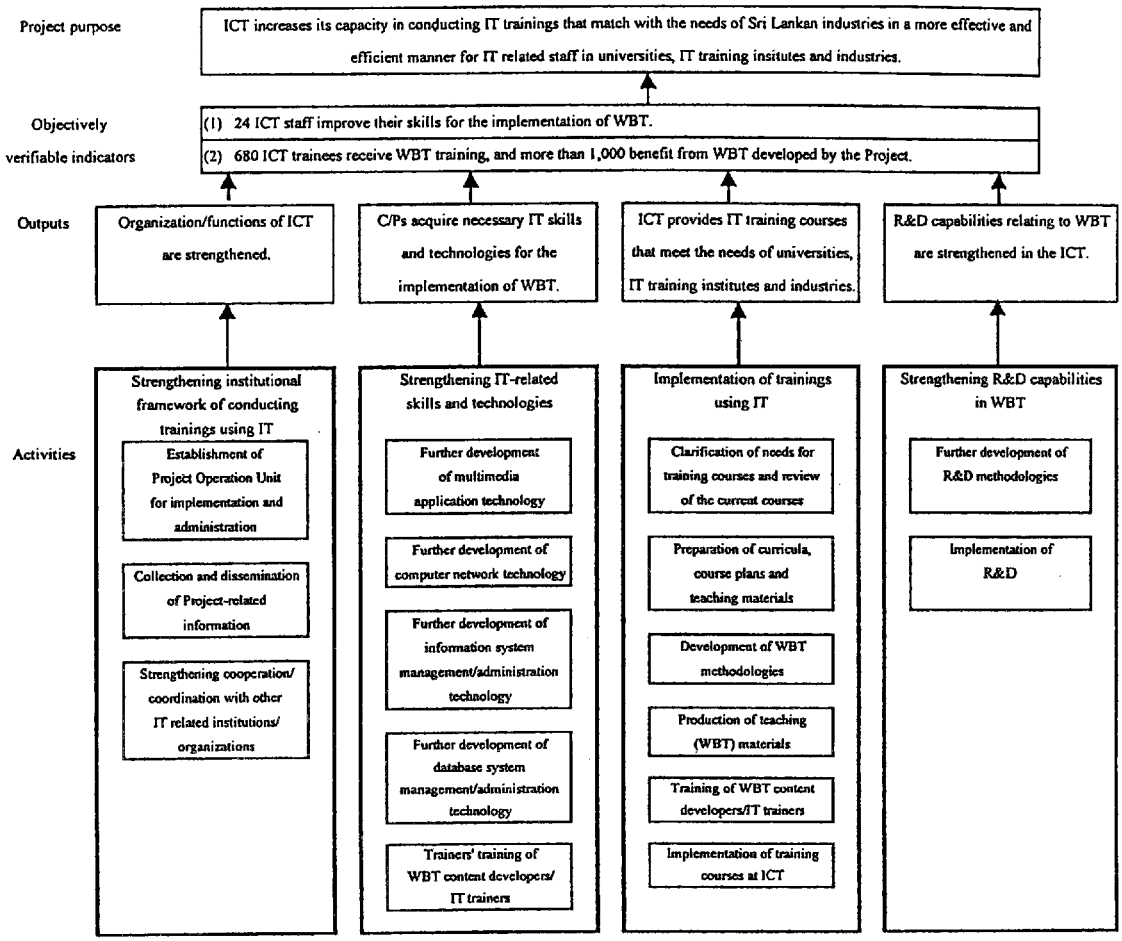
To achieve this overall goal, it is imperative for the Sri Lankan side to continue its own efforts on expanding and diffusing outputs of the Project and also applying know-how and experiences of the model cases of implementing WBT to the ICT itself, many other universities and various IT related institutions and organizations in the country.

5-2. Goal of the project

As already noted, overall goal of the Project is to contribute to improving both quality and quantity of IT related human resources in Sri Lankan industries. IT is not only one of the target industries to lead the country's economic growth, but also a key factor to upgrade all strategically important industries in Sri Lanka. Therefore, promoting human resource development in IT in the country through an increase in advanced IT trainers and a capacity building of major IT training institutions and universities is a very important task to be solved. Thus, the goal of the Project must be "ICT increases its capacity in conducting IT trainings that match with the needs of Sri Lankan industries in a more effective and efficient manner for IT related staff in universities, IT training institutes and industries." In the effort to meet the goal, comprehensive use of WBT (Web-Based Training) and Internet is requisite. To evaluate the degree of the achievements, the following index could be used:

(1) 24 ICT staff improves their skills for the implementation of WBT.
(2) 680 ICT trainees receive WBT training, and more than 1,000 benefit from WBT developed by the Project.

Figure 5-2. Project Purpose, Outputs and Activities (Image)



5-3. Achievements and activities of the Project

5-3-1. Achievements

In the Project, the following four are expected to achieve as outputs;

(1) Organization/functions of the ICT are strengthened.

(2) C/Ps acquire necessary IT skill and technologies for the implementation of WBT.

(3) ICT provides IT training courses that meet the needs of universities, IT training institutes and industries.

(4) R&D capabilities relating to WBT are strengthened in the ICT.

5-3-2. Activities

Four major activities of the Project are summarized as "Strengthening institutional framework of conducting training using IT", "Strengthening IT-related skills and technologies", "Implementation of trainings using IT" and "Strengthening R&D capabilities in WBT".

"Strengthening institutional framework of conducting trainings using IT" includes (1) Establishment

of Project Operation Unit for implementation and administration, (2) Collection and dissemination of Project-related information and (3) Strengthening cooperation/coordination with other IT related institutions/organizations. This covers issues of an establishment and administration of project center–in the ICT, of planning and coordinating project operation schedule for every year, and of administrating, monitoring and evaluating project activities.

"Strengthening IT-related skills and technologies" includes (1) Further development of multimedia application technology, (2) Further development of computer network technology, (3) Further development of information system management/administration technology, (4) Further development of database system management/administration technology and (5) Trainers' training of WBT content developers/IT trainers. This covers issues of educational multimedia tools to develop highly accessible web contents, technology in relation to Java programming, database management system, and network security system. Technology transfer from the Japanese experts to direct counterparts of the ICT, and occasionally to indirect counterparts of the ICT, will be implemented. Most of the ICT staff are expected to enhance enough knowledge and skills to conduct training of WBT content developers and IT trainers who are to participate in new WBT-related training courses held at the ICT.

"Implementation of trainings using IT" includes (1) Clarification of needs for training courses and review of the current courses, (2) Preparation of curricula, course plans and teaching materials, (3) Development of WBT methodologies, (4) Production of teaching (WBT) materials, (5) Training of WBT content developers and IT trainers, and (6) Implementation/evaluation of training courses at the ICT.

The Project would develop 6 different sets of basic WBT materials. On the first stage, the Project would develop and utilize WBT materials for some subjects in IT field for ICT students so that the materials could be used, tested and revised with feedback. One WBT material which would be developed by the Project accordingly is WBT material for training course for WBT content developers and or IT trainers to be held at the ICT. On the second stage, the Project plans to develop (a) WBT materials for Bachelor of Information Technology (BIT) courses of the ICT which should be shared among several IT training institutes, and (b) WBT material which would be shared among universities and IT training institutes.

"Strengthening R&D capabilities in WBT" includes (1) Further development of R&D methodologies and (2) Implementation of R&D. Concrete area of R&D is to be defined shortly.

In the course of activities in the implementation of trainings using IT, active participations trainings of WBT content developers and IT trainers held at the ICT by such universities as Universities of

Colombo, Moratuwa, Peradeniya, Kelaniya and Ruhuna are highly expected, given an effective coordination and consultations with the JCC and the Industry – University Forum. Participations by other universities, IT training institutes and industries are also expected with a consultation of the Industry – University Forum. It is also assumed that the Project may make use of the third country training program scheduled to be carried out as part of package cooperation for IT human resource development the IT in Thailand.

5-4. Matters with different goals from the above

There are none.

5-5. Inputs

5-5-1. Inputs by the Japanese side

a) Experts

Since the Project deals with advanced IT fields, it is desirable to employ several, different experts for short term in order to efficiently implement the Project and to acquire appropriate personnel for each issue. Expected areas of short-term experts are: i) multimedia basics and application, ii) computer network, iii) Database system and software design, and iv) WBT applications. Several short-term experts for strengthening R&D capabilities of the ICT are also planned to dispatch. There will be two long-term experts, a chief advisor and a technical coordinator, and their major roles will be overall project management and operation (see Table 5-1).

Table 5-1. Japanese Experts

Fields	Major Activities
Planning and Coordination (2 long-term experts: Chief advisor and Technical coordinator)	Overall planning, coordination and administration Planning and allocation of personnel, budget, machinery and equipment Collection and dissemination of Project-related information Coordination with the JCC, Indstry - University Forum, and other realted oragnization Participation in monitoring and evaluation
IT-related skills and technologies) (WBT-related technologies)	Development and technology transfer in multimedia application technology, computer network technology, information system management/ administration technology, and database system management/administration technology (Dispatch of 4-8 short-term experts per year is to be planned.)
R&D in WBT	Assistance in further development of R&D capabilities Assistance in implementation of a couple of R&D theme (Dispatch of 2-4 short-term experts per year is to be planned.)

b) Preparation of the project base and supply of equipment

The project base is to be located at the existing ICT building on the campus of the University of Colombo. The ICT is ready to prepare enough space to conduct all activities under the Project such as development, training and R&D in relation to WBT in the existing building. The organization is

responsible for and ready to make a proper arrangement to prepare rooms for the Project with necessary furniture, electric infrastructure, air conditioners, telephone lines, and so forth, as shown on a layout plan of the Project site in the Annex.

Equipment is planned to provide by Japan in order to effectively implement the Project. The following is a summary, and the details of machinery and equipment that are planned to provide are attached in the Annex.

Table 5-1. List of equipment to be provided by Japan

Location	Equipments
ICT, University of Colombo	1. PC: 40 - 50 units 2. Server: 5-7 units 3. Network device 4. PC peripheral device 5. Related software

c) Training in Japan

By training counterpart personnel in the areas of multimedia, network, security, database, and WBT-based curriculum in Japan, effective implementation of the Project and a smooth transfer of technology and knowledge are expected to achieve. Training of the Sri Lankan counterparts in Japan is considered to realize for the number of experts between 0 and 3 every year, depending on the budget constraints of the Japanese side.

5-5-2. Inputs by the Sri Lankan side

a) Personnel (including counterpart)

Professors, lecturers and instructors of the ICT are expected to participate in daily work of the related activities of the Project with the cooperation of Japanese experts in technology transfer, development, training and R&D in relation to WBT. Project Director (PD) and the Project Coordinating Manager (PCM) are to be nominated for management and institutional arrangements for the Project. 6 direct counterparts are to be nominated, being who will receive technology transfer from the Japanese experts and will train WBT content developers and IT trainers from universities, IT training institutes and industries as advanced WBT instructors, as well as who will train students and trainees of various training courses at the ICT. 18 indirect counterparts, including 2 for R&D activities, are also nominated, and these indirect counterparts would also be responsible for training of WBT content developers and IT trainers from other organizations as well as students and trainees of revised or introduced training courses in relation to WBT at the ICT. Indirect counterparts are also eligible to receive technology transfer from the Japanese experts, if and where possible. Tentative list of the Sri Lankan counterparts is attached in the Annex.

b) Facilities, land, equipment, and fund

In order to effectively implement the Project, the following facilities, land, equipment, and funds must be prepared by the Sri Lankan side. Details are to be discussed in the JICA second preparatory study.

Table 5-3. Facilities, land, equipment and funds to be prepared by the Sri Lankan side

Location	Item	Contents
ICT, University of Colombo	Facilities, land	Multimedia development room, Multimedia Studio Training Laboratory, Server room, Staff room both for JICA experts and Sri Lankan counterparts
	Equipment	Network devices, Other machines, equipments required for the Project except supplied ones by Japan
	Fund	Operating costs for the Project, Costs for Sri Lankan counterparts and related staff of the ICT

Note: Necessary fund for participations in training courses held at ICT by teaching staff and researchers of universities is to be considered by the University Grants Commission, the Ministry of Education and Higher Education.

5-6. Analysis of external conditions and risks arising from external factors

Because the Project is to contribute to increasing capacity of the ICT and an institutional mechanism of human resource development in IT, there are little possibilities to face unforeseeable risk factors such as natural disaster. However, it is the very basic condition that the country can keep the social and political stability during and even after the Project

5-7 Pre-project obligations and necessary conditions

Even though it is not a pre-condition for the Project, improvement of high capacity communication infrastructure connecting various universities and IT training institutions would accelerate an effective diffusion of the Project's achievements. It is strongly expected for the Sri Lankan side to make every efforts of doing so.

The development and strengthening of IT human resources is recognized as one of the most important factors to accelerate the country's economic growth and the ICT is positioned as a central organization to achieve this goal, the risk of facing a shortage of input resources by the Sri Lankan side in terms of budget, staff and equipment is believed to be very small.

6. Overall validity of implementing the project

6-1. Technological advantage of Japan in the area concerned

In the Japanese advanced education and lifelong education for adults, various experiments and implementation regarding the development and utilization of curriculum using IT, methodologies of WBT, teaching/learning materials and network/database design and management have been performed. Not only the Ministry of Education, Culture, Sports, Science and Technology (MEXT),

but also private sector, particularly a multimedia and IT-related sector, has accumulated technologies and experiences in the field until now. Moreover, the JICA Okinawa International Center and the JICA Tokyo International Center have implemented lots of relevant IT trainings for developing countries. It is believed that there is a solid foundation for JICA to make a technical cooperation in the field of the Project both in terms of technology and availability of human resources.

6-2. Projected impacts

6-2-1. Political impact

Information Technology (IT) has a potential to put revolutionary impacts on lives of human beings and society, and is also seen as one of the most important factors for the development and growth of the world economy. However, while development and utilization of IT have been accelerated and centralized in advanced countries in a rapid manner, expansion of digital divide between advanced countries and developing countries where fundamentals of economic and social infrastructure have not well been prepared has become a critical issue for development framework.

The Project aims at strengthening the direction of human resource development in IT in Sri Lanka through capacity building of the ICT. Achievements of the Project are to be effectively shared and diffused to many universities, IT training institutes and industries, which would lead to solve a shortage in skilled IT personnel in the country, a bottleneck for the growth of the Sri Lankan IT sector and knowledge-based economy. This would contribute to improving the level of IT in relation to WBT application, with an expected expansion of WBT to nationwide scale in the future. Effects for the development policy framework will be large for Sri Lanka where human resource development in IT is one of the important pillars of National Policy for Information Technology.

6-2-2. Institutional impact

The following two can be expected as effects for the institutional framework by the Project.

(1) Strengthening capacity of the ICT

The ICT is expected to increase its capacity of developing and utilizing WBT applications, and even teaching them in various IT training courses. Some revision and reorganization of ICT's training courses are expected to reflect achievements by the Project. The ICT is the leading IT training institution of the country with the BIT degree program that attracts thousands of students as a defacto standard of IT training. When the ICT increases its capacity by setting up high level of training standard in WBT application, the impacts of institutional framework become large.

(2) Diffusion of high level of standard of IT training in WBT applications

When curriculum using IT, methodologies and materials for WBT are established, they can be

effectively diffused to and used by relevant universities and institutions including public and private IT training institutes. The ICT can set a high level of standard of IT trainings in WBT applications through the Project and disseminate those achievements by using WBT application, and this leads to a big improvement in institutional framework of human resource development in IT in Sri Lanka.

6-2-3. Social and cultural impact

a) Characteristics of beneficiary

The ICT direct and indirect counterparts are the first layer of beneficiary and teaching staff and researchers of university, IT training institutes and industries are the second layer of beneficiary. A large number of trainees at the ICT, students of University of Colombo, Moratuwa University and Peradeniya University would also be benefited from achievements of the Project through improved, more advanced IT training courses. Other universities and IT training institutions would also be benefited from developed WBT methodologies and materials by the Project for their expansion and strengthening of IT courses. These could also lead to strengthening the foundations of the country's IT sector and IT-related industries by increasing technology level of their employees through enriched IT trainings at the ICT and other institutions.

Table 6-1. Scope of beneficiary

Target	Benefits description
ICT (24 ICT staff)	Increased capacity of conducting IT training as a leading organization Increased capacity of trainers' training for WBT content developers /IT trainers Increased R&D capabilities in WBT applications
Teaching staff and researchers at universities, IT training institutes and industries (200 staff)	Increased capacity of WBT content development/IT training Increased availability of WBT materials stored at ICT server
Students and trainees at the ICT, universities and IT training institutions (at least 1,480)	More opportunities for high quality, effective IT training More opportunities for advanced WBT application trainings Increased availability of WBT materials stored at ICT server
Industries, including IT sector	Increased availability of skilled IT professionals Increased technology level in WBT applications of employee Increased availability of WBT materials stored at ICT server

b) Size of beneficiary

The size of direct and indirect counterparts at the ICT of the Project is expected to be 24. At least 200 teaching staff and researchers would participate in trainings of WBT content developers and IT trainers, which will be held at the ICT. 480 ICT trainees at various courses will receive developed WBT related training, and at least 1,000 BIT registered students will benefit from achievements of the Project. When teaching staff and researchers of universities, IT training institutes and industries,

who receive training of WBT content developers and IT trainers held at the ICT should conduct their own WBT content development and IT trainings in WBT, the size of beneficiaries would become large.

6-2-4. Technical impact

a) Technical impact and content of technology and knowledge transfer

In the transfer of technologies in the Projects, the following aspects should be in consideration in order to achieve smooth and effective implementation of technology transfer:

i) Technologies and knowledge that will be transferred must be proven and practical in business.

ii) Experts must be dispatched at appropriate timing in each stage of the Project.

iii) Japanese experts' working in Japan is also an important component for effective technology and knowledge transfer in WBT. Therefore, it is necessary to make activities in Sri Lanka and Japan both effective by establishing close connections and interactions between the two.

iv) Japanese technical cooperation requires actual results and performance in the Project.

Taking into account of those issues, it is appropriate to design a project that utilizes resources in the Japanese private sector at maximum through contracts with JICA.

The following fields and contents of technology are expected to transfer from the Japanese experts to the Sri Lankan counterparts experts (Table 6-2).

Table 6-2. Contents of technology and knowledge that should be transferred in the Project

Technology		Theory	Practice	Contents of technology and knowledge
Multimedia	Multimedia basics	△	△	- Various kinds of medias
				- Simple content development using multimedia
	Multimedia application	○	○	- Advanced skills for producing multimedia (image, sound, video)
				- Internet multimedia (stream media, compression technique and transmission band)
				- Basic content formulation using multimedia
Network	Basic communication line	△	△	- Basic theory (encoding, multiplexing, transmission method, etc.)
				- Types and features of communication lines
				- Types and features of transmission procedures
				- Types and features of commercial communication line service
	Information system management and administration	○	○	- Method of operation management (resource, facility, and user)
				- Maintenance, security and performance management
				- Internet technology
				- Concept of intranet
				- Methods of building intranet (setting of server, CGI)
Database	Basic database system	△	△	- Types and principles of DB
				- RDBMS/SQL
				- Basic methods of design
				- Techniques of building database system
	Software design	○	○	- Structured programming/ object oriented programming/ visual programming
				- Algorithm application and efficiency (hash/ compression/ encryption etc., calculated amount)
				- Design of user interface
				- Differences in software design method between procedural and event-driven systems
				- Development plan and management techniques
				- Types of software tests and techniques of designing software tests
WBT	Design/development of WBT applications	○	○	- Design and development of WBT methodologies
				- Production of teaching (WBT) materials
R&D	Enhancement of R&D capabilities in WBT	○	○	- Strengthening R&D management methods
				- Implementation of R&D (in a few areas)

(○: Technology and knowledge transfer is necessary.
△: Technology and knowledge are acquainted by CPs, but the updated one is to be transferred.)

For software design method, although the ICT already has a certain level of technology, new technology would be transferred, when necessary. Currently, the ICT has a problem of having no advanced staff that can readily be in charge of developing learning materials. This requires a series of instruction material development processes including planning, preparing, using and evaluating the materials. Also, there are no technical producers capable of using education engineering based on the "Instructional Design" and communication theory. It is indispensable to develop instruction materials for education or training purposes, in order to make effective use of the network technology, develop full-scale use of Internet for education purposes, and finally diffuse information technology. The Project would contribute to solving these issues by means of technology transfer from the Japanese experts and of C/P training program in Japan, when necessary and possible.

6-2-5. Economic Impact

Because the Project is to develop and further improve Sri Lankan human resources in IT, it is rather difficult to foresee direct economical impacts. However, when effective WBT applications are developed with appropriate curriculum using IT, materials and methodologies, and these are widely used, economic impacts will be large, taking into account of the existence of thousands of employee of the IT sector. JICA's Master Plan Study for Industrialization and Investment Promotion submitted to the Sri Lankan Government in July 2000 sets targets of IT Service Industry as shown in Table 6-3. Although these figures can be only reference to think of the size of the economic impacts, the Project would contribute to increasing value added and employment, particularly of much more skilled IT personnel, in the industry, and would make an important role of achieving those target numbers set by any strategic plan for the IT sector in the country.

Table 6-3. Targets of IT Service Industry proposed in the JICA Development Study

Year	2004	2010
Turnover (R. million)	24,800	57,000
Value Added (Rs. Million)	10,500	27,000
Exports (Rs. Million)	14,100	21,800
Employment (Persons)	9,700	15,800
of which are S/E and Programmers	4,400	8,600
Demand SEP/year	670	760

Source: Master Plan Study for Industrialization and Investment Promotion in the Democratic Socialist Republic of Sri Lanka, JICA, July 2000

7. Project monitoring and evaluation

7-1. Monitoring

Monitoring outputs and achievements of the Project is to be realized at the ICT. While monitoring of the Project both in the ICT is to be conducted by each responsible counterpart, the Project Director (PD) is expected to be responsible of conducting and coordinating overall monitoring of the Project under directions and advice of the Joint Coordinating Committee (JCC).

Table 7-1. Monitoring

Monitoring items	Timing
1. Number and capabilities of IT instructors	Periodic, Completion of the Project
2. Number of subjects, contents, total learning hours of WBT curriculum and materials (development volume)	Periodic, Completion of the Project
3. Number and total volume of manuals for training of WBT applications(development volume)	Periodic, Completion of the Project
4. Number of teaching staff and researchers who receive training for WBT content developers/IT instructors	Periodic, Completion of the Project
5. Number of ICT students and trainees who receive newly-developed IT trainings in WBT applications	Periodic, Completion of the Project
6. Number of BIT students who receive(use) newly-developed IT trainings(materilas) through WBT	Periodic, Completion of the Project
7. Number of access and utilization of developed WBT materials, contents and DB except BIT students	Periodic, Completion of the Project
8. Number of academic papers related to WBT presented at domestic or international, academic meetings	Periodic, Completion of the Project

7-2. Evaluations

Evaluation of the Project is to be made based on (1) Level of achievements of goals, (2) Effectiveness of outputs, (3) Efficiency in implementation, (4) Appropriateness of planning, (5) Sustainability. After commencement of the Project, necessary surveys and evaluation such as intermediate evaluation, implementation guidance survey and project completion evaluation will be conducted.

8. Annexes

Annex 1 PDM (Project Design Matrix)

Project Title: "Capacity Building Project of the Institute of Computer Technology"

Project Period: June 1, 2002 - May 31, 2005

Target Places: Colombo in the Democratic Socialist Republic of Sri Lanka

Target group: Teaching staff and researchers at ICT, universities and IT training institutes.
Trainees of various IT training courses at ICT

Drafted by : JICA second Preparatory Study Team 26 November 2001

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall goal - Both quality and quantity of IT related human resources in Sri Lankan industries are improved.	1. Number of skilled IT personnel in industries, trained at ICT, increases at certain rate of growth. 2. IT utilization in industries improves both in terms of quantity of personnel and technology level	1. Review of statistical records at ICT 2. Field research (questionnaire and interview survey) by ICT, FITIS, and so forth	- There is no drastic change in political and economic situation in Sri Lanka - Continual, effective planning/ implementation of IT policies/measures in industries, particularly in IT sector
Project purpose - ICT increases its capacity in conducting IT trainings that match with the needs of Sri Lankan industries in a more effective and efficient manner for IT related staff in universities, IT training institutes and industries	1. 24 ICT staff improve their skills for the implementation of WBT. 2. 680 ICT trainees receive WBT training, and more than 1,000 benefit from WBT developed by the Project.	1-1. Statistics and records at ICT (Qualification and training records etc.) 1-2. Questionnaire and interview survey 2-1. Records at ICT and access record on WEB	–
Outputs 1. Organization/functions of ICT are strengthened. 2. C/Ps acquire necessary IT skills and technologies for the implementation of WBT. 3. ICT provides IT training courses that meet the needs of universities, IT training institutes and industries 4. R&D capabilities relating to WBT are strengthened in the ICT.	1. Number and capability of staff, budget and established management system are increased/enhanced. 2-1. 6 advanced instructors in WBT are developed in ICT 2-2. 18 trainers for WBT content developers /IT trainers are developed in ICT 3-1. 6 different sets of basic WBT materials are prepared. 3-2. 4 WBT training modules are implemented as model cases. 3-3. 200 WBT content developers/IT trainers in universities, IT training institutes and industries are trained. 3-4. 12 different modules are introduced and a total of 480 students are trained in relation to WBT at ICT. 3-5. 1,000 BIT students get training through WBT. 4. At least 2 academic papers related to WBT are presented at domestic or international, academic meetings.	1. Statistics and records at ICT (Allocation of personnel, budget, etc.) 2-1. Records at ICT (Number of courses instructed by trainers who receive technical transfer by the Project) 2-2. Evaluation by the Joint Coordinating Committee 3-1. Records at ICT (Number of WBT materials) 3-2. Records at ICT (Number of implemented WBT) 3-3. Records at ICT (Number of trainings, number of trainees by type of organization) 3-4. Records at ICT (Number of WBT module registration and passed number for those modules) 3-5. Records on the WEB (Access number, etc.) 4. Records at either ICT or academia	–
Activities 1-1. Establishment of Project Operation Unit for implementation and administration 1-2. Collection and dissemination of Project-related information 1-3. Strengthening cooperation/coordination with other IT related institutions/organizations 2-1. Further development of multimedia application technology 2-2. Further development of computer network technology 2-3. Further development of information system management/ administration technology 2-4. Further development of database system management/ administration technology 2-5. Trainers' training of WBT content developers/IT trainers 3-1. Clarification of needs for training courses and review of the current courses 3-2. Preparation of curricula, course plans and teaching materials 3-3. Development of WBT methodologies 3-4. Production of teaching (WBT) materials 3-5. Training of WBT content developers/IT trainers 3-6. Implementation of training courses at ICT 4-1. Further development of R&D methodologies 4-2. Implementation of R&D	Input		- Trained C/Ps and trainers remain in their working field in IT related training.
	The Japanese side Experts: 2 Long-term experts(Chief advisor, Technical coordinator), 4-8 short-term experts in IT per year (technology transfer of WBT) 2-4 short-term experts in R&D per year (R&D in WBT) (Total of 40 M/M at maximum for the project period) Equipment: Equipment for development such as PC, Server and related software Equipment for training such as PC, Server, network equipment and related software Training in Japan: 0-3 members per year	The Sri Lankan side C/P Personnel: Direct C/P: 6 Indirect C/P: 18, of which 2 are also R&D C/P Facilities: Facilities for training and R&D at the ICT Local cost: Operating costs for the Project	- Communication and coordination with other universities and IT training institutions are properly managed by the Industry - University Forum with the guidance of JCC, UGC and the Ministry of Education and Higher Education - Information and communication infrastructure in Sri Lanka keeps the current level, and preferably advances.

Annex 2 Plan of Operations (PO)

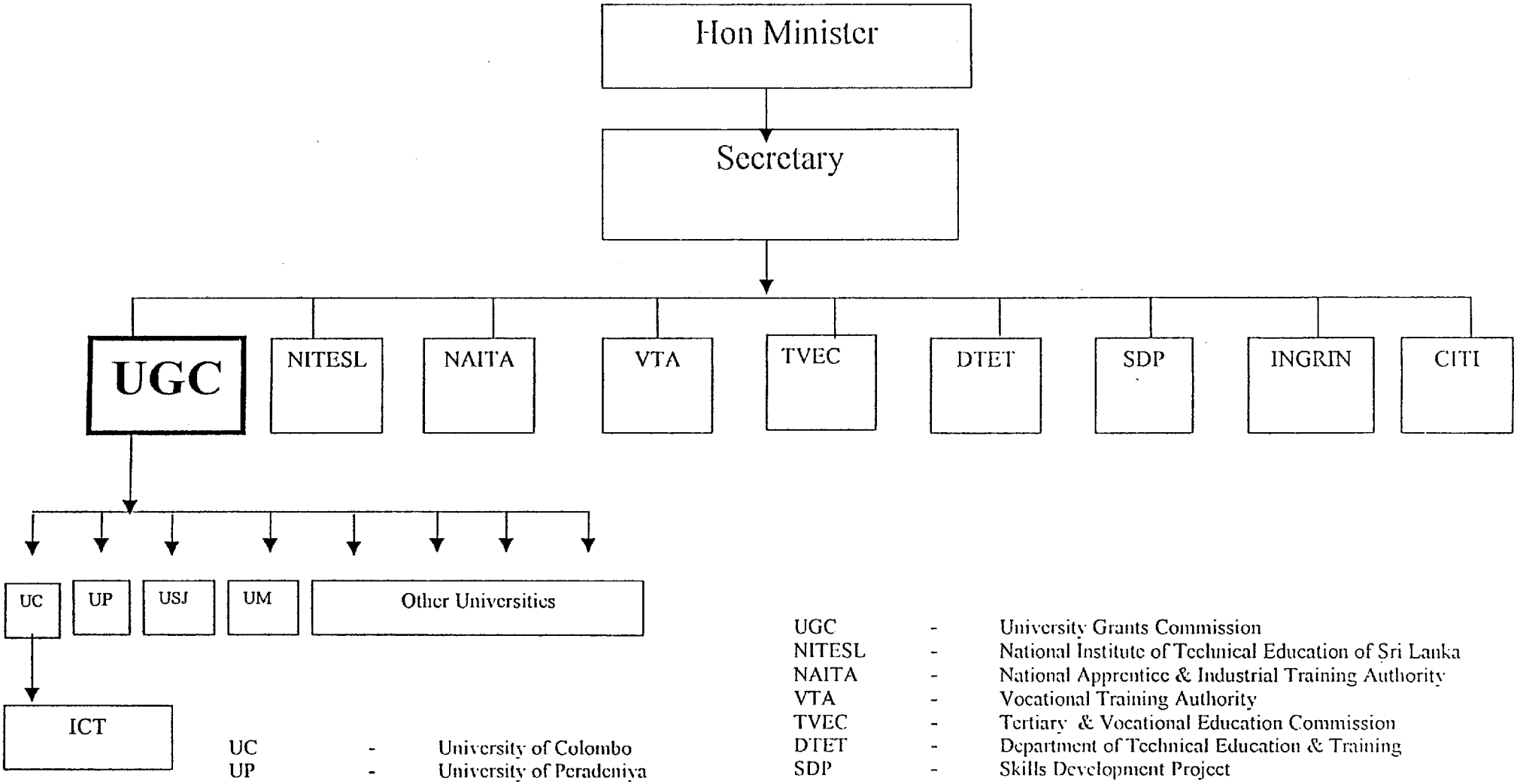
Project period: from June 1, 2002 to May 31, 2005

26 November 2001

Activities	Details of Activities	Schedule (Calendar year, quarter)	Inputs	Outputs
		2002 (2) (3) (4) / 2003 (1) (2) (3) (4) / 2004 (1) (2) (3) (4) / 2005 (1) (2)		
Strengthening institutional framework of conducting trainings using IT	Establishment of Project Operation Unit for implementation and administration	Allocation of personnel & budget, usage and maintenance of machinery and equipment properly Planning of operation schedule for every year / Administration / Monitoring and evaluation	Japanese long-term experts PD, PCM C/P	- Organization/functions of ICT are strengthened.
	Collection and dissemination of Project-related information	Collection/dissemination of related/necessary information		
	Strengthening cooperation/ coordination with other IT related institutions/organizations			
Strengthening IT-related skills and technologies	Further development of multimedia application technology		Japanese short-term experts (several) C/P Hardware for development Software for development Hardware for training Software for training	- C/Ps acquire necessary IT skills and technologies for the implementation of WBT.
	Further development of computer network technology			
	Further development of information system management/ administration technology			
	Further development of database system management/ administration technology			
	Trainers' training of WBT content developers/IT trainers			
Implementation of trainings using IT	Clarification of needs for training courses and review of the current courses		Japanese short-term experts (several) C/P Hardware for development Software for development Hardware for training Software for training	- ICT provides IT training courses that meet the needs of universities, IT training institutes and industries.
	Preparation of curricula, course plans and teaching materials			
	Development of WBT methodologies	Design/development/evaluation in courses A, B, C / Design/development/evaluation in courses D, E, F		
	Production of teaching (WBT) materials	Design/development/evaluation in courses A, B, C / Design/development/evaluation in courses D, E, F		
	Training of WBT content developers/ IT trainers	Training for WBT courses A, B, C / Training for WBT courses D, E, F		
	Implementation of training courses at ICT			
Strengthening R&D capabilities in WBT	Further development of R&D methodologies		Japanese short-term experts (several) C/P Hardware for R&D Software for R&D	- R&D capabilities relating to WBT are strengthened in the ICT.
	Implementation of R&D	Research and development in fields X & Y		

Annex II-1

ORGANIZATION CHART
MINISTRY OF TERTIARY EDUCATION & TRAINING



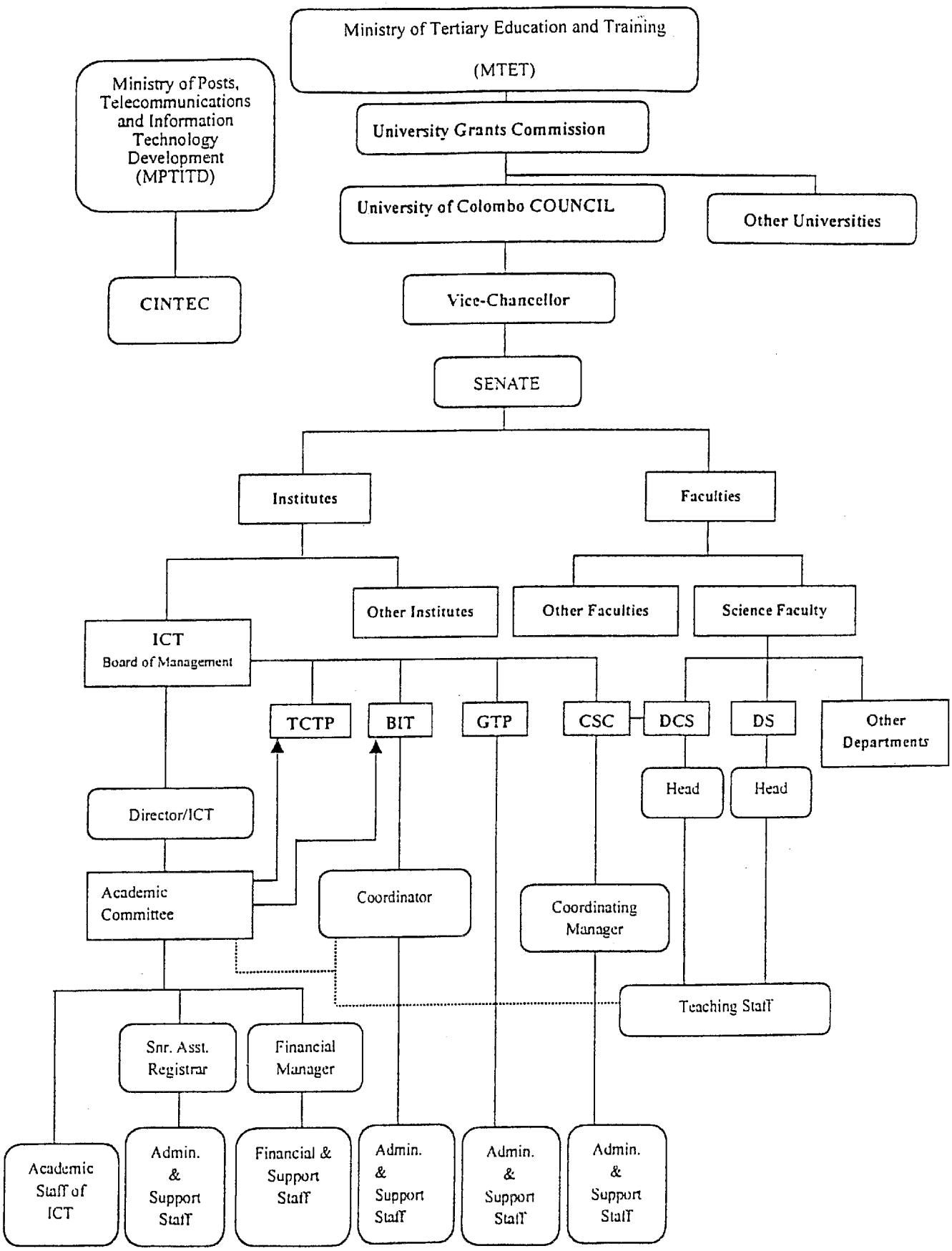
UC	-	University of Colombo
UP	-	University of Peradeniya
USJ	-	University of Sri Jayawardena
UM	-	University of Moratuwa
ICT	-	Institute of Computer Technology

UGC	-	University Grants Commission
NITESL	-	National Institute of Technical Education of Sri Lanka
NAITA	-	National Apprentice & Industrial Training Authority
VTA	-	Vocational Training Authority
TVEC	-	Tertiary & Vocational Education Commission
DTET	-	Department of Technical Education & Training
SDP	-	Skills Development Project
INGRIN	-	Ingrin Institute Printing & Graphics Sri Lanka Ltd.
CITI	-	Clothing Industry Training Institute

Annex II-2

Organization chart of the Ministry of Tertiary Education and Training

University of Colombo and the ICT



Annex 3-1 Budget of the ICT

Institute of Computer Technology - University of Colombo

Estimate of Recurrent Expenditure for the Year 2002 - 2005

Account Description	Code	Expenditure as per Draft Accounts 2000	Estimated expenditure for the year 2001	Actual 2001 Jan - May	Expected 2001 Note 2	Year 2002 Estimated	Year 2003 Estimated	Year 2004 Estimated	Year 2005 Estimated
Account Description									
Income									
Government Grant	1	7,085,000.00	8,710,000.00	3,268,200.00	8,710,000.00	10,250,000.00	11,275,000.00	12,402,500.00	13,642,750.00
Other Grants	2	0.00	700,000.00	0.00	1,500,000.00	1,500,000.00	1,650,000.00	1,815,000.00	1,996,500.00
Internal Revenue	3	2,874,794.13	4,000,000.00	236,718.00	2,989,500.00	3,000,000.00	3,300,000.00	3,630,000.00	3,993,000.00
		9,959,794.13	13,410,000.00	3,504,918.00	13,199,500.00	14,750,000.00	16,225,000.00	17,847,500.00	19,632,250.00
Expenditure									
Personal Emoluments	4	6,607,635.64	8,510,000.00	3,196,861.79	8,439,715.13	9,283,686.64	10,212,055.30	11,233,260.83	12,356,586.92
Travelling & Subsistance	25	14,130.90	220,000.00	2,061.40	5,442.10	14,367.13	15,803.84	17,384.23	19,122.65
Supplies	6	297,141.25	740,000.00	200,610.89	529,612.75	582,574.02	640,831.42	704,914.56	775,406.02
Mantenance	7	298,607.02	750,000.00	272,113.25	718,378.98	790,216.88	869,238.57	956,162.42	1,051,778.67
Contractual Services	8	1,980,638.18	1,500,000.00	805,279.29	2,125,937.33	2,338,531.06	2,572,384.17	2,829,622.58	3,112,584.84
Other Recurrrent Expences	9	683,345.56	1,490,000.00	480,236.85	1,267,825.28	1,394,607.81	1,534,068.59	1,687,475.45	1,856,223.00
Financial Assistance to Students	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GELT Programme	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backlog Clearence	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		9,881,498.55	13,210,000.00	4,957,163.47	13,086,911.57	14,403,983.54	15,844,381.89	17,428,820.08	19,171,702.09

Annex 3-2

Estimated Budget for the Project 2002 - 2005

		2002	2003	2004	2005
Recurrent Expenses:		Rs.	Rs.	Rs.	Rs.
Personal Emoluments	Note 1	2,000,000.00	2,200,000.00	2,420,000.00	2,662,000.00
Maintenance		1,000,000.00	1,100,000.00	1,210,000.00	1,331,000.00
Utility Services	Note 2	3,500,000.00	3,850,000.00	4,235,000.00	4,658,500.00
Contractual Services	Note 3	2,000,000.00	2,200,000.00	2,420,000.00	2,662,000.00
Other Recurrent Expenses		1,000,000.00	1,100,000.00	1,210,000.00	1,331,000.00
Capital:					
Furniture & Fittings - Cost		1,500,000.00	500,000.00	500,000.00	500,000.00
Equipment Local Component	Note 4	16,000,000.00	-	-	-
Rehabilitation:					
(Special Constuction - Labs, Studio etc.)		8,000,000.00	-	-	-
		35,000,000.00	**10,950,000.00**	**11,995,000.00**	**13,144,500.00**

Note 1

Personal Emoluments consist of payments to the following staff

Instructors - 6 (Salary Scale BS2)
Media Officer 1 (Salary Scale A4)
Media Technology Assistant 4 (Salarry Scale A6)
Computer Application Assistant 3 (Salary Scale A8)

Note 2

Utility Services include payments for water, electicity, telephone and internet connectivity etc

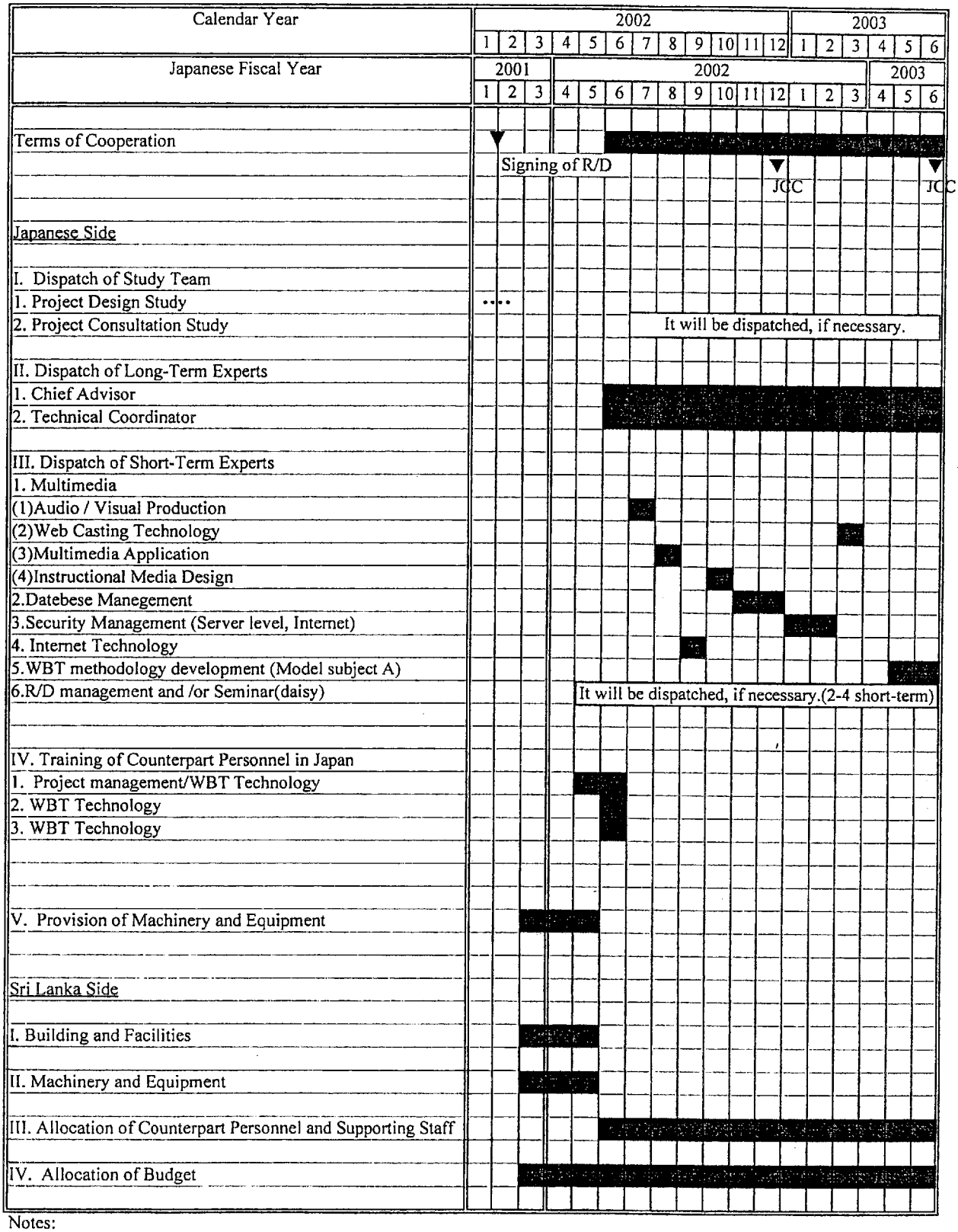
Note 3

Constructional Services include payment for secirity services, cleaning, pest control etc.

Note 4

The Local component for year 2002 (GST, NSL, Stamp duty cleaning etc.
on the import of equipment worth of JPY 100-120 Milions)

Annex 4 Annual Tentative Schedule of Implementation (ATSI)



Notes:

1.Japanese fiscal year starts in April and ends in March.

2.This schedule is subject to change if necessary, such as with the progress / budgetary constraint of the Project.

Annex 5

List of Short – term Experts for the first year

The Japanese short-term experts listed below will be dispatched during the first year of the Project. The Sri Lankan side understood that the numbers, fields and the term of the Japanese experts were subject to change due to the recruitment of the respective experts, the progress of the Project, budgetary constrain. In case of these, JICA will inform the Sri Lankan side.

As for technology transfer from the Japanese experts, the Internet should be fully used in the process. Therefore the Japanese experts should respectively provide Internet based training / follow up for certain period before their arrival and after their departure.

No.	Specific Field	Target Product	Duration
1	Multimedia (A) -Audio /Visual Production	Teaching / Learning material for advanced level seminar.	1 month (from July, 2002)
2	Multimedia (B) -Web casting technology	Teaching / Learning material for advanced level seminar	1 month (from March, 2003)
3	Multimedia (C) -Multimedia application	Teaching / Learning material for advanced level seminar	1 month (from August, 2002)
4	Multimedia (D) -Instructional media design	Teaching / Learning material for advanced level seminar	1 month (from October, 2002)
5	Database management (Intermediate)	Teaching / Learning material for advanced level seminar	2 months (from Nov., 2002)
6	Security management -Server level security -Internet security	Teaching / Learning material for advanced level seminar	2 months (from January., 2003)
7	Internet technology -TCP/IP -Internet networking -WWW server technology	Teaching / Learning material for advanced level seminar	1 month (from Sept. , 2002)
8	WBT methodology development (Model subject A)	Model teaching / learning material for subject A	2 months (from May, 2003)
9	R/D management and/or Seminar	Teaching / Learning material for advanced level seminar	2 weeks It will dispatch, if necessary (2-4 Short-term Expert)

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
Direct Counterparts				
1. Mr. C. M. B. Atthanayake	Male	27	**Project Assistant** Computing Services Center	**1. Consultant** Ministry of Finance and Planning in Y2K project From Januar1999 y – January 2000 **2. Participated the training program on Software Quality Assurance** From June 2000 - August 2000 3. **Participated on the training program at CICC Tokyo Japan on Client server system development and won the "Best Achievement Award"** From May 2001 - July 2001
2. Mr. G.P.N. Boteju	Male	33	**Instructor (Gr. 11)**	**1. Project Assistant** From June 1999 – Feb 2001. Computing Services Center, Institute of Computer Technology **2. Instructor (Gr. 11)** From Feb 2001 – To date Institute of Computer Technology
3. Mrs. M. W. A. C. R. Wijesinghe	Female	30	**Instructor**	**1. Project Assistant** From Oct 2000 – Feb 2001 Computing Services Center, Institute of Computer Technology **2. Instructor** From Feb 2001 – To date Institute of Computer Technology
Three more new carder positions (Instructors) will be created by June, 2002 as direct counterpart for the project				

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
Indirect Counterparts				
1. Mr. M J P U Samanthilaka	Male	41	**Information Systems Manager**	**1. Computer Engineer** ICL – International Computers Limited From April 1981 – April 1982 **2. Computer Field Service Engineer** Dataserve Ltd From Apri1982 l – August 1987 **3. Engineer** Institute of Computer Technology From September 1987 – October 1998 **4. Information Systems Manager** Institute of Computer Technology From October 1998 – to Date
2. Mr. S T Nandasara	Male	49	**1. Lecturer in Information Technology** **2. Course Director** Third Country Training Programme in Information Systems Engineering **3. Senior Consultant to the Computing Services Center,** University of Colombo	1. **Research Assistant** From January 1980 – March 1981 Department of Pharmacology, Faculty of Medicine University of Colombo, Sri Lanka 2. **Technical Assistant** From April 1981 – December 1982 Statistical Unit, Department of Mathematics Faculty of Science, University of Colombo ,Sri Lanka. 3. **Statistical Officer** From January 1983 – November 1987 Dept. of Statistics and Computer Science, Faculty of Science, University of Colombo, Sri Lanka 4. **Instructor in Computer Technology – Grade II** From November 1987 – November 1992 Institute of Computer Technology (ICT),

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
				University of Colombo, Sri Lanka 5. **Instructor in Computer Technology – Grade I** From November 1992 - May 1996 Institute of Computer Technology (ICT), University of Colombo, Sri Lanka 6. **Information Technology Consultant** From July 1992 – May 1993 Asian Institute of Technology, Bangkok, Thailand & Ministry of Policy Planning & Implementation, Colombo, Sri Lanka. 7. **Lecturer in Computer Technology** From May 1996 – to date Institute of Computer Technology (ICT), University of Colombo, Sri Lanka.
3. Mr. G K A Dias	Male	39	**Senior Lecturer**	**1. Trainee Computer Programmer** From Nov. 1982 – May 1984 Computer Center, Mathematics Department, University of Colombo **1. Computer Programmer/ Systems Analyst Grade II** June 1984 - Dec. 1985 Computer Center, Mathematics Department, University of Colombo **1. Computer Programmer/ Systems Analyst Grade II** Jan. 1986 - Dec. 1989 Department of Statistics and Computer Science, University of Colombo. **4. Computer Programmer/ Systems Analyst Grade I** From Jan. 1990 - Oct. 1996

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
				Department of Statistics and Computer Science, University of Colombo
4. Mr. K S Goonatillake	Male	41	**1. Senior Engineer (Computer Maintenance)** **2. Course Coordinator** Computer Aided Drafting using AutoCAD **3. Course Coordinator** Upgrading and Maintenance of Personal Computer Systems **4. Course Coordinator** Advance AutoCAD	**1. Technical Research Assistant** From Oct. 1984 – Feb. 1985 Computer Center, Dept. of Mathematics, University of Colombo **2. Training Programmer/Instructor** From Feb 1985 – July 1987 Dept. of Mathematics, University of Colombo **1. Engineer (Computer Maintenance)** From July 1987 – July 1999 Institute of Computer Technology University of Colombo. **1. Senior Engineer (Computer Maintenance)** From July 1989 – To date Institute of Computer Technology University of Colombo.

Annex 6 **List of the ICT staff for the Project (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
5. Mr. L. P. Jayasinghe	Male	42	**1. Instructor (Gr.1)** (Computer Technology) **2. Course Coordinator-** Postgraduate Diploma in Computer Technology **3. Course Coordinator-** Certificate Course in the use of Information Technology for Development. **1. Academic Coordinator** for the First – Bachelor of Information Technology (External)	**1. Trainee Computer Instructor** From Nov 1984 – March 1986 Dept. of Statistics and Computer Science **1. Research Assistant** From April 1986 – June 1986 Council for Information Technology (CINTEC) **1. Computer Programmer** From July 1986 – Aug.1987 Council for Information Technology (CINTEC) **4. Instructor (Computer Technology)** Institute of Computer Technology **1. Coordinator Training (Contract Basis)** From March 1998 – March 1999 Computing Services Center **1. Coordinating Manager (Contract Basis)** From January 2001 – May 2001 Computing Services Center
6. Mr. P A D Sunil	Male	38	**Instructor (Gr. II)**	**1. Research Assistant** From Feb 1988 – Aug 1988 Council for Information Technology (CINTEC) **2. Systems Operator (Main Frame)** From Aug 1988 – Jan 2000 Institute of Computer Technology University of Colombo **3. Instructor (Gr. II)** From Jan 2000 – To date Institute of Computer Technology
7. Dr. N D Kodikara	Male	46	**Senior Lecturer in Computer Science (Grade I)** Department of Computer	**1. Statistical Officer** From Aug. 1979 - Aug. 1980 Statistical Unit, Department of Mathematics University of Colombo

Annex 6 **List of the ICT staff for the Project (Tentative)**

Name	Sex	Age	Position/Role in ICT	Summary of Career
			Science 1. **Resource Person** Third Country Training Programs (ICT) 2. **Conducting CSC short courses –** Virtual Reality Modeling Three Dimensional Graphics Modeling.	2. **Research Assistant** From Sept. 1980 – Aug. 1981 Statistical Unit, Department of Mathematics University of Colombo 3. **Computer Programmer/ Systems Analyst** From Aug. 1981 to Oct. 1984 Statistical Unit, Department of Mathematics University of Colombo 4. **Assistant Lecturer** From Oct. 1984 - March 1989 Department of Statistics and Computer Science University of Colombo 5. **Senior Lecturer (Grade II)** From March 1989 – March 1995 Department of Statistics and Computer Science University of Colombo
8. Dr. D N Ranasinghe	Male	41	**Senior Lecturer (Gr. II)** Department of Computer Science	

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
9. Dr. Ajith P. Madurapperuma	Male	40	1. **Member Academic Committee** 2. **Visiting Lecturer** 3. **External Examiner** 4. **Former Staff member**	1. **Senior Lecturer in Computer Science** From 1997 – to date 2. **Senior Consultant** **CINTEC (Council for Information Technology)** 3. **Computing Services Center,** From 1997 – to date University of Colombo 4. **Research Student and Technical Support Officer** Department of Computer Science, University of Wales Cardiff, P.O. Box 916, Cardiff Wales, United Kingdom 5. **Lecturer in Computer Science,** From 1991 – 1992 Department of Statistics and Computer Science, University of Colombo 6. **Instructor,** From 1990 – 1991 Institute of Computer Technology, University of Colombo 7. **Student** (Master of Science), From 1989 – 1990 Department of Computer Science, University of Wales Cardiff, P.O. Box 916 8. **Instructor,** From 1988 – 1989 Institute of Computer Technology, University of Colombo
10. Dr. A. R. Weerasinghe	Male	41	**Director,** From 2001 Apr – July 2000	**1. Senior Lecturer**

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
11. Dr. G. N. Wickramanayake	Male	41	**1. Senior Lecturer (Gr. II)** Department of Computer Science, University of Colombo **1. BIT Academic Coordinator** **3. Member BIT** **4. Academic Committee** **7. Visiting Lecturer** **8. External Examiner** **9. Consultant** Computer Services Center, ICT	**1. IT Consultant** 2. **Senior Lecturer Grade II,** From 1996 – 2001, Department of Statistics & Computer Science, University of Colombo 3. **Post Graduate Research Student,** From 1991 – 1996, Department of Computer Science, University of Wales, Cardiff 4. **Lecturer** From 1990 – 1991, Department of Statistics & Computer Science, University of Colombo 5. **Post Graduate Student,** From 1988 – 1989, Master of Computer Science, Department of Computing Mathematics, University of Wales, Cardiff 6. **Systems analyst cum Programmer,** From 1988 – 1990, Department of Statistics & Computer Science, University of Colombo 7. **Assistant Lecturer** From 1985 – 1988, Department of Statistics & Computer Science, University of Colombo 8. **Technical Research Assistant,** Department of Statistics & Computer Science, University of Colombo
12. Dr. D. D. Karunaratne	Male		**Senior Lecturer (Gr. 11)**	

Annex 6 List of the ICT staff for the Project (Tentative)

Name	Sex	Age	Position/Role in ICT	Summary of Career
13. Mr. G. P. Seneviratne	Male	38	**1.Senior Lecturer (Gr. II)** **2. Examiner/ Module Coordinator** **3. BIT Coordinator** **4. Coordinator MSc. In Computer science** **5. Resource person/CSC** **6. Visiting Lecturer/ICT**	**1. Trainee Analyst/ Programmer (Temp)/ Research Assitant(Temp)** From Nov 1984 – Feb 1988 **2. System Analyst/Programmer** From March 1988 – June 1990 **3. Lecturer** From July 1990 – August 1996 **4. Senior Lecturer** **From** Sep 1996 – to date **1. Visiting Lecturer/Examiner** University of Kelaniya University of Sri-Jayawardenapura
14. Mr. D. A. S. Athukorala	Male	33	**Lecturer** Department of Computer Science	**1. Assistant Lecturer** From 1996-1997 University of Colombo **1. Lecturer** From 1997- to date University of Colombo
15. Mr. R Senanayake	Male	28	**Asst. Lecturer** Department of Computer Science	**1. Principal Investigator** Visual Computing Research Group
Two Lecturer and one Assistant Network Manager Posts are vacant at ICT. These personals will be available for the project as Indirect Counterparts.				

Annex 7 List of Attendants

1. Sri Lankan side

(1) Ministry of Tertiary Education and Training

Mr. Saman Ediriweera	Secretary
Mr. A.M. Chandrapala	Additional Secretary

(2) Department of External Resources

Ms. Sujatha Cooray	Director

(3) University Grants Commission

Prof. B.R.R.N Mendis	Chairman

(4) University of Colombo

Prof. Savitri Goonesekere	Vice Chancellor
Prof. T. Hettiarachchy	Actg. Vice Chancellor

(5) Institute of Computer Technology, University of Colombo

Prof. V.K. Samaranayake	Director
Mr. ST Nandasara	Lecturer

2. Japanese side

(1) Embassy of Japan

Mr. Katsuyo Eguchi	Second Secretary

(2) JICA Sri Lanka Office

Mr. Seiji Kaiho	Resident Representative
Mr. Hiroyuki Tanaka	Asst. Resident Representative