

VoIP Implementation:

A Case Study of NBS (division of Nedbank Ltd)

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NBS Private Voice Network

Business Objectives

- ★ Centralization of Retail Branches back office functions
 - Centralized Loans Administration
 - Removal of back office branch functions
- ★ Single point of contact for the client – Contact Centre
- ★ Single advertised directory number – 0860 Share Call
- ★ Improve intra-company communications

Voice VPN Project Overview

Project Commenced - August 1997
Project end - May 2000
Project Scope - 140 Branches

- Cost Effective solution : capital/operational
- Standard switching platform
- Alignment with business centralization project
- National 5 Digit number plan
- Intelligent Platform (Call Optimization)

Solution

PABX Platform

- Philips IS3000
- Dial up architecture (unknown call volumes)
- 3:1 Compression on single 64kbp/s ISDN b-channel
- Proprietary ISNeT Signaling – Full Feature Transparency
- Telkom Infrastructure
 - Telkom Primenet Solution
 - Telkom ISDN – Implemented throughout network

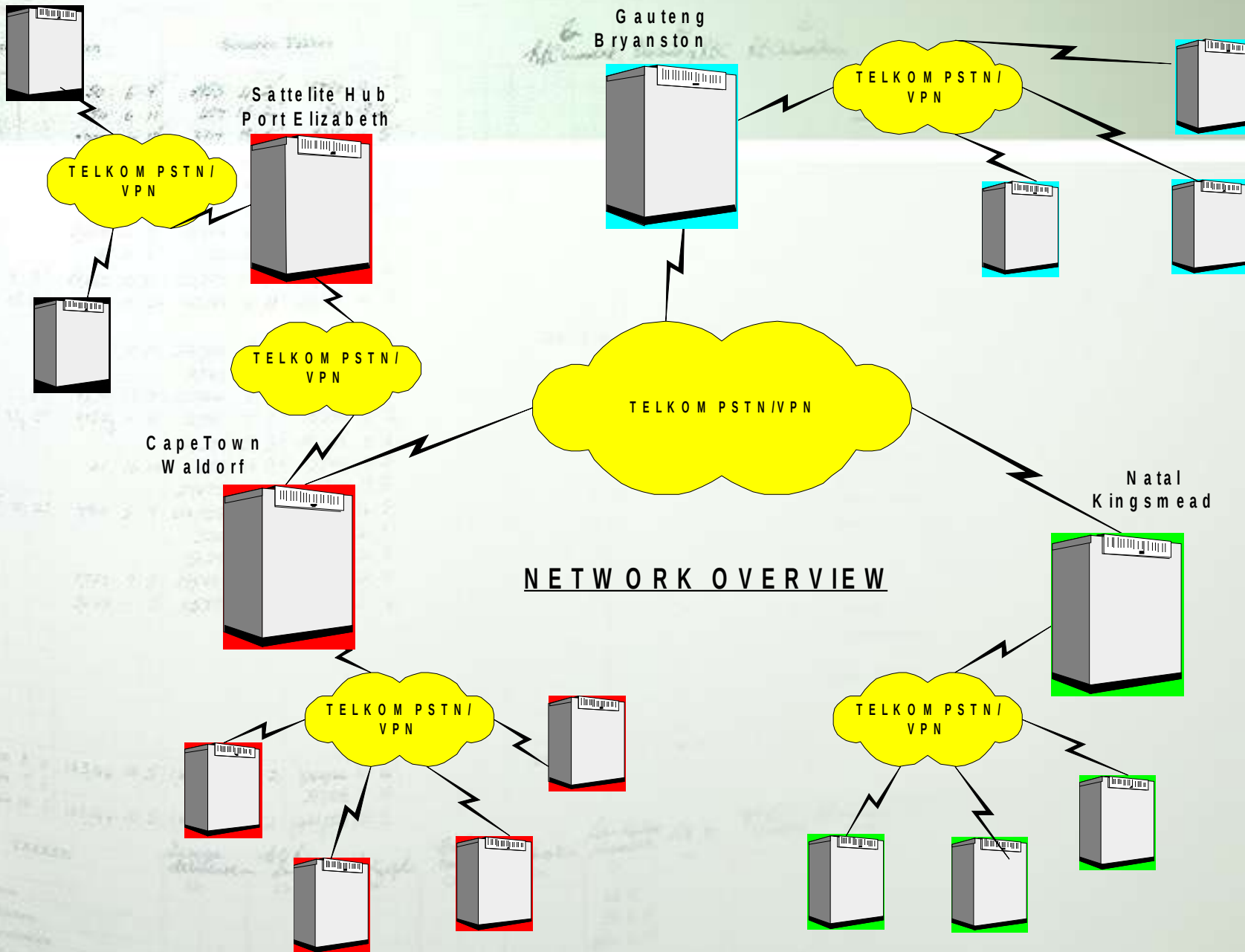
Gauteng
Bryanston

Sattelite Hub
Port Elizabeth

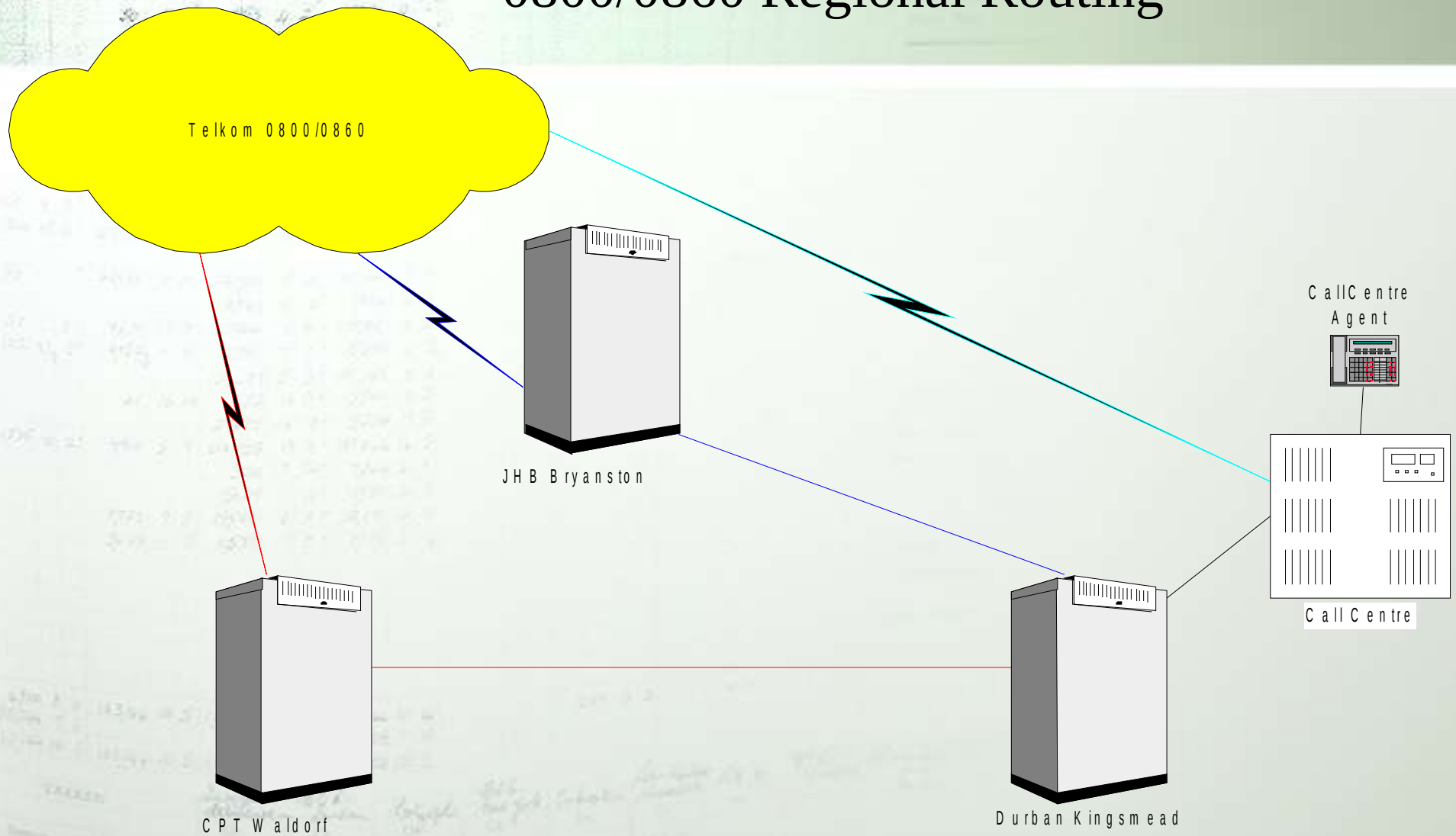
CapeTown
Waldorf

Natal
Kingsmead

NETWORK OVERVIEW



0800/0860 Regional Routing



Results

- Improved Intra company communication spectacularly
- Branch Switchboard function redundant (DiD)
- Consistent customer service level provided – Contact Centre

Challenges:

- Increased usage of Voice VPN – intra/0860
- Centralized Telkom billing
- Increase in Telkom tariffs

Next Phase Voice VPN

■ Start - May 2001 End - Dec 2001

Centralized TMS Implementation

- Business tool to control escalating call volumes and cost.
- Accurately measure voice traffic patterns and usage

Implementation of VoIP – Toll Bypass

- Long Haul links
- Branch

TeleManagement issues on the NBS Private Voice Network

Dramatic Increase in Telephone Call Costs

Charge back of Telkom calls

Traffic Trends & Infrastructure Requirements

Telkom Billing

Staff efficiency reports

- Unable to dispute client complaints re:time to answer
- No form of measuring telephone client service at both switchboard and branches

VoIP Pilot

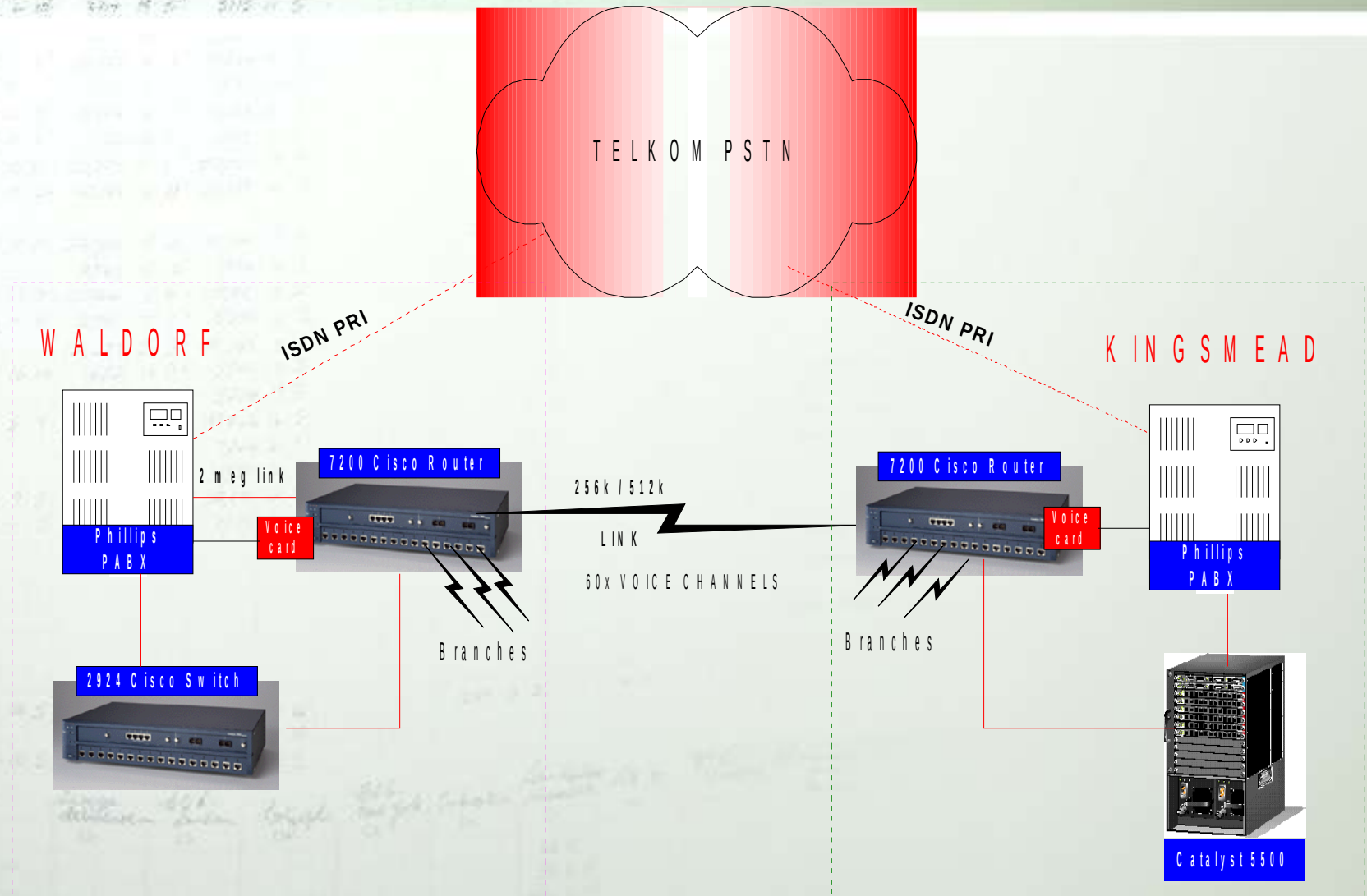
Requirements:

- The functionality had to be the same or better
- The system to support a heterogeneous PABX environment
- Solution to meet international communications standards
- Offer effective management on our online network services environment.
- Cost effective pricing structure

Participants:

- DD/Cisco
- Philips SA

VOICE OVER IP - PILOT



Results Cisco VoIP

Acceptable speech quality

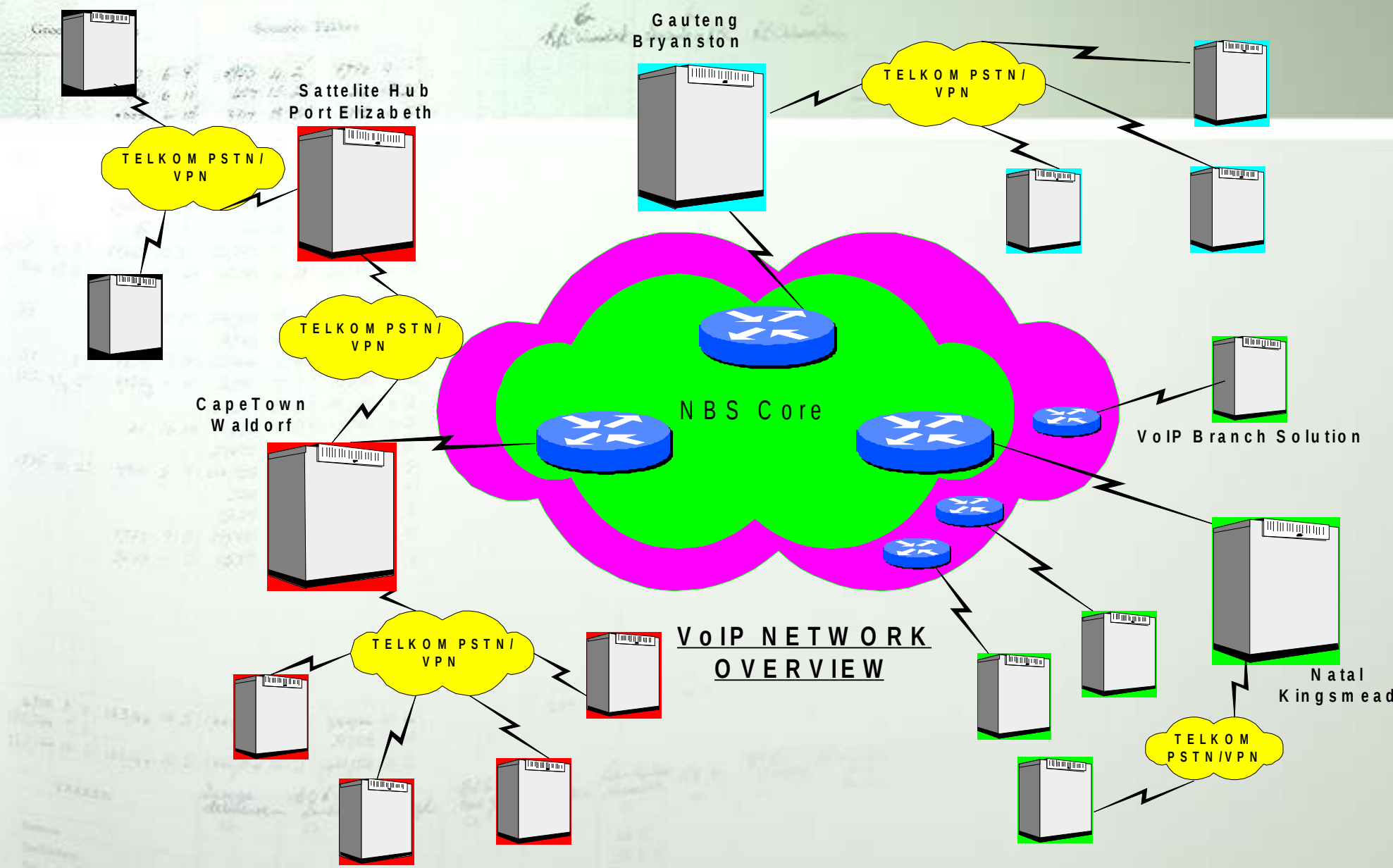
- 15kpb/s per voice call running G729 Codec and IP Header Compression
- No voice fallback to PABX – IOS Bug
- Unable to provide a 64kbp/s clear channel for proprietary signaling.
- Protocol used ISDN ETSI

Next Steps

- Voice fallback resolved
- Clear channel signaling codec enabled

Implementation: Backbone / Long haul links

- Dual E1 VoIP cards installed at 3 regional nodes – 3640 Routers
- QoS issues affecting voice – IP Precedence on specific apps
- Bandwidth provisioning
- CAC implemented on regional gatekeepers – Latency
- Router IOS versions
- Created a dynamic routing table for new PABX installations



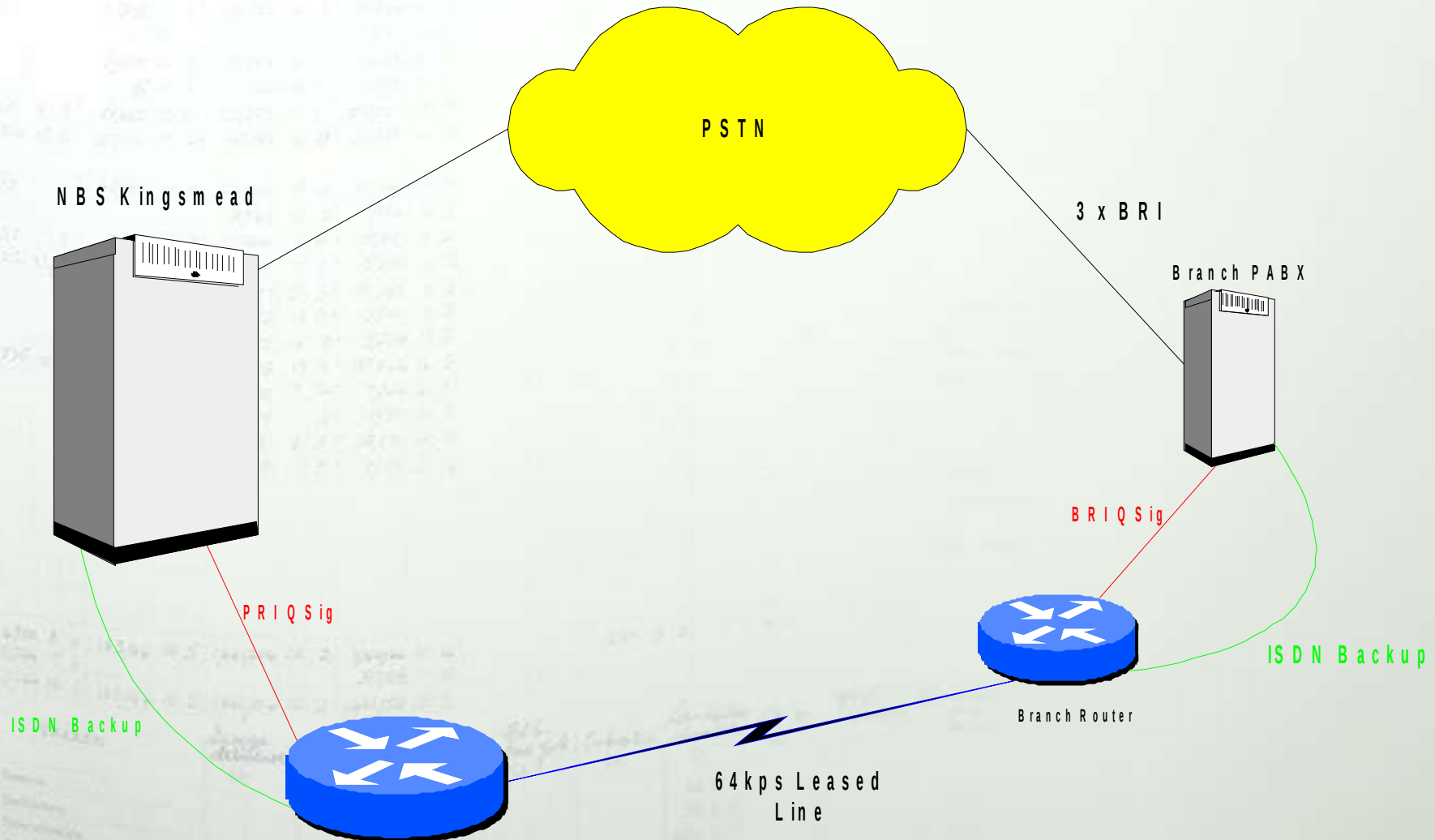
Financial Impact:

- Capital Expenditure (Cisco & Philips): Minimal
- Additional capacity Data Backbone network Doubled
- Telkom Primenet Bill savings 60%
- Nett savings (Network Capex and Opex costs) 40%
- Operational Functionality on Data Network Increased

Implementation: Branches

- Dual Basic rate cards installed at Branches 1751 routers
- Disparate PABX switches (Philips, Ericsson)
- Protocols – ISDN ETSI & Qsig
- 15kpb/s per voice call running G729 Codec and IP Header Compression
- Added resilience for Voice & Data – Dial-up ISDN
- No Primenet Costs for Branch Intra company calls

Branch Overview



Next Phases of Project:

- Rolled out VoIP to major BoE sites & Consumer Credit Div.
- Implementation of Video in Branches Project: (2002 – 2003)
 - Installed at 80 NBS branches in 2 phases
 - Running via 64k line with Colour
 - Savings achieved:
 - Branch Management staff
 - Increased customer service levels
- Usage by Nedcor Call Centre

Questions